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Dual burden of ocular myasthenia gravis: A multicentre study of visual and psychosocial impact in a Malaysian cohort

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Abstract

Background: Ocular myasthenia gravis (OMG) is a neuromuscular junction disorder characterised by fluctuating ptosis and variable ophthalmoplegia. While its motor manifestations are well recognised, the effects of OMG on vision-related quality of life (VRQoL) and psychological well-being remain underexplored. *Methods*: This one-year multicentre cross-sectional study recruited 118 patients with OMG from four tertiary hospitals in Malaysia. VRQoL was assessed using the Visual Function Index-14 (VF-14), and psychological status using the Hospital Anxiety and Depression Scale (HADS). Associations with clinical and sociodemographic factors were examined using regression analyses. *Results*: Patients had a mean age of 44.76 (SD 1.57) years and a mean disease duration of 4.31 (SD 0.28) years. The mean VF-14 score was 3.58 (SD 0.09), with visually demanding activities, such as reading small print and navigating steps, significantly more impaired than low-demand tasks. The mean HADS-D score was 4.92 (SD 4.12), with 51.7% of participants reporting mild to moderate depressive symptoms, whereas anxiety was uncommon (mean HADS-A 0.97, SD 1.34; 1.7% mild symptoms). Depressive symptoms were significantly associated with being single, ptosis affecting cosmesis, and work impairment due to OMG, while longer disease duration was protective. Anxiety was associated with younger age, Malay ethnicity, being single, systemic comorbidities, and work impairment.
Conclusions: Despite preserved visual acuity, fluctuating ptosis and diplopia significantly impair daily functioning and psychological well-being in OMG. The dissociation between relatively preserved visual function and emotional distress highlights the need for integrated care, including routine psychological screening, to improve overall quality of life.

Keywords: Myasthenia gravis, ocular myasthenia gravis, vision-related quality of life, VF-14, HADS

INTRODUCTION

Myasthenia gravis (MG) is a chronic autoimmune neuromuscular disorder characterized by fluctuating skeletal muscle weakness due to autoantibodies targeting the nicotinic acetylcholine receptors (AChRs) or related proteins at the neuromuscular junction (NMJ).[1] The global prevalence is estimated to be 12.4 per 100,000 people.[2] In Malaysia, earlier epidemiological data from a tertiary referral center reported an average of 5.16 new MG

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diagnoses annually[3], while more recent cohort study indicate that approximately one-quarter of MG patients had pure ocular symptoms.[4]

MG is broadly categorized into generalized (GMG) and ocular (OMG) forms, the latter confined to the extraocular muscles and manifesting with diurnally variable, fluctuating ptosis and diplopia without limb or respiratory involvement.[1,5,6] Although visual acuity is often preserved, the variability and unpredictability of this ocular symptoms can significantly impair daily functioning and reduce vision-related quality of life (VRQoL).[7,8] OMG is therefore frequently perceived as a relatively mild form of MG because visual acuity remains intact. This assumption may lead to under-recognition of the functional and psychological burden imposed by fluctuating ptosis and diplopia, particularly in resource-limited or middle-income settings. This study challenges this perception by examining functional visual disability and psychological distress among patients with OMG in a Malaysian cohort.

Beyond visual impairment, patients with MG frequently experience psychological distress, including anxiety and depressive symptoms, related to disease chronicity, cosmetic concerns, and work or social limitations.[7,9-11] Psychosocial outcomes in MG are influenced not only by disease manifestations but also by sociodemographic and cultural factors such as employment status, social support, and healthcare access.[11-14] However, data on the visual and psychological impact of OMG within the Malaysian population remain limited. Given the country's unique sociocultural context, understanding these dimensions is essential to optimize holistic patient care. This study therefore examined functional vision as the key component of VRQoL, and psychological well-being in patients with OMG and explored the clinical and sociodemographic factors associated with these outcomes.

METHODS

Study design

This multicenter cross-sectional study was conducted between January and December 2024 at four tertiary centers in Malaysia: Hospital Pakar Universiti Sains Malaysia (HPUSM), Hospital Raja Perempuan Zainab II (HRPZII), Hospital Sultan Abdul Halim (HSAH) and Hospital Seberang Jaya (HSJ). Ethical approval was obtained from the Human Research Ethics Committee of Universiti Sains Malaysia (USM/JEPeM/KK/23100790) and the National Medical Research Registry Malaysia (NMRR ID: 23-03174-U27). The study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki.

Patient selection and data collection

Patients diagnosed with OMG aged over 18 years were recruited using the no sampling method. Patients with pre-existing psychiatric disorder and cognitive impairment before OMG diagnosis and those with amblyopia, ptosis, or ophthalmoplegia caused by conditions other than OMG were excluded. Written informed consent was obtained from all participants prior to study enrolment.

Direct interviews were used to collect demographic data, including age, gender, marital status, occupation, educational attainment, and household composition. Relevant clinical information, including comorbidities, duration of MG diagnosis, presenting symptoms, ocular and generalized features, diagnostic workout, and treatment, was retrieved from the medical records. Functional vision, a key component of VRQoL was assessed using the Visual Function Index-14 (VF-14), whereas psychological status was evaluated using the Hospital Anxiety and Depression Scale (HADS). The validated Malay version of both questionnaires was used in this study[15,16], as *Bahasa Melayu* is the primary language spoken by most participants and widely understood across Malaysia. The questionnaire was administered either via self-completion or with interviewer assistance, provided by a single trained research assistant for those with limited literacy.

Participants who had not undergone prior ophthalmological evaluation were referred to the Ophthalmology Department of the same hospital for a comprehensive eye examination, including visual acuity, extraocular muscle movement, presence of diplopia or ptosis, and fundus examination. To facilitate averaging and statistical analysis, best-corrected visual acuity (BCVA) values were converted to the logarithm of the minimum angle of resolution (logMAR) format.

VF-14 questionnaire

The VF-14 was used to assess the functional

vision through patient-reported visual disability related to OMG, reflecting functional aspects of VRQoL. We selected the VF-14[15,17] over other well-described instruments such as the National Eye Institute Visual Function Questionnaire-25 (NEI VFQ-25)[18] because it contains fewer items and imposes a lower respondent burden. The VF-14 focuses on the impact of vision on daily activities and is easier to administer and interpret across diverse patient populations. It has been widely applied in ophthalmic research, including studies involving glaucoma, retinal and corneal diseases, refractive errors and dry eyes.[15,19-21]

The questionnaire comprises 14 items to evaluate the degree of difficulty in performing vision-dependent daily activities, such as reading small print, reading books, reading large prints, recognizing street signs and faces, seeing steps, doing fine handwork, recognizing money, and being involved in outdoor activities, cooking, watching television, and driving during daytime or night time. Each item is rated on a 5-point scale from 0 (unable to perform because of vision) to 4 (no difficulty); the total score is calculated by averaging the responses to applicable items and multiplying by 25, yielding an aggregate score ranging from 0 to 100, with higher scores indicating better visual function.

HADS questionnaire

The HADS is a validated instrument to screen for psychological distress in non-psychiatric populations and has been translated and validated across many languages.[16] It comprises two subscales: anxiety (HADS-A) and depression (HADS-D), each containing seven items rated on a 4-point Likert scale (0–3). The total score for each subscale ranged from 0 to 21, with higher scores indicating greater severity of symptoms. The scores were further categorized into the following severity levels: normal (0–7), mild (8–10), moderate (11–15), and severe (16–21). Patients detected with anxiety or having depressive symptoms were acknowledged and referred to the psychiatric department for further management and counselling.

Statistical analysis

The collected demographic and clinical data, as well as HADS and VF-14 scores, were analysed using SPSS version 29. Descriptive statistics were used to describe participants' sociodemographic characteristics. Normally distributed numerical data were presented as means with standard deviation (SD), while non-normally distributed data were reported as medians with interquartile ranges (IQR). Categorical data were described using frequencies and percentages. For VF-14 score analysis, patients were dichotomised into two groups: "no visual impairment" (aggregate score 99–100) and "has visual impairment" (scores 30–98). The latter group encompassed slight (93–98), mild (75–92), moderate (30–74), severe and very severe impairment categories. Binary logistic regression was used to identify clinical and sociodemographic predictors of functional visual impairment based on this VF-14 categorisation. Similarly, HADS-D scores were dichotomised into "no depression" (score 0–7) and "has depressive symptoms" (score 8–21), which included mild, moderate, and severe categories. Simple and multiple logistic regression analyses were conducted to examine factors associated with depressive symptoms. Due to the highly skewed distribution of HADS-A scores, anxiety was treated as a continuous variable and analysed using simple and multiple linear regression. Statistical significance was defined as $p \leq 0.5$.

RESULTS

Demographic and clinical profile

A total of 118 patients with a mean disease duration of 4.31 (SD 0.28) years were included in the study. The majority of patients were female (60.2%) with mean age of 44.76 (SD 1.57) years. Most patients (98.3%) presented with ptosis, which was unilateral in 61.9% of cases, and 61.2% reported associated cosmetic concerns. Diplopia was reported by 64.4% of the patients. The mean LogMAR BCVA was 0.22 (SD 0.11). Ocular comorbidities were identified in 28.8% of the patients, predominantly non-proliferative diabetic retinopathy (NPDR, 94.1%), with only two cases of cataract. Demographic details and clinical characteristics are presented in Table 1.

VF-14 responses: Analysis of visual impairment and VRQoL

The mean total VF-14 score was 3.58 (SD 0.087), corresponding to an aggregate score of 89.5 out of 100. More than half of participants (62.7%) were classified as having mild to moderate visual impairment based on VF-14 aggregate scores (Table 2). Item-level analysis showed

Table 1: Demographic and clinical profiles of patients with OMG (n=118)

Demographic profiles	n (%)	Clinical profiles	n (%)
Age (years)		**Duration of MG (years)**	
Mean (SD)	44.76 (1.57)*	Mean (SD)	4.31 (0.28)*
<20	5 (4.2)		
20–29	26 (22.9)	**Comorbidities**	
30–39	19 (16.1)	Systemic***	58 (49.2)
40–49	25 (21.2)	Ocular	34 (28.8)
50–59	14 (11.9)	Cataract	32 (94.1)
60–69	15 (12.7)	NPDR	2 (5.9)
≥70	13 (11.0)		
Sex		**Symptoms**	
Male	47 (39.8)	Ptosis	116 (98.31)
Female	71 (60.2)	Affecting Cosmesis	71 (61.2)
		Not Affecting Cosmesis	45 (38.8)
Race		Diplopia	76 (64.4)
Malay	97 (82.2)	Generalized MG	62 (52.5)
Non-Malay	21 (17.8)		
Marital status		**Laterality of ptosis**	
Single	57 (48.3)	Unilateral	73 (61.9)
Married	61 (51.7)	Bilateral	43 (36.4)
Educational level		**Work affected by MG symptoms**	
Secondary and below	29 (24.6)	Yes	42 (53.16)
Tertiary	89 (75.4)	No	37 (46.8)
Employment		**AChR-antibody**	
Employed	79 (66.9)	Positive	73 (61.9)
Non-employed	39 (33.1)	Negative	45 (38.1)
Living situation		**BCVA (LogMAR)**	
Alone	28 (23.7)	Mean (SD)	0.22 (0.11)*
With family	90 (76.3)		
Monthly household income (RM)**			
<5000	68 (57.6)		
5000–11000	50 (42.4)		
>11000	-		

Abbreviation: MG, myasthenia gravis; OMG, ocular myasthenia gravis; SD, standard deviation; NPDR, non-proliferative diabetic retinopathy; AChR, acetylcholine receptor; BCVA, best-corrected visual acuity
*Mean (SD) **Monthly household income based on Malaysia Income Groups & Classification (2025)
***Systemic comorbidities include diabetes mellitus, hypertension, and hyperlipidaemia.

mean scores of ≥ 3 across all domains (Table 3). Tasks requiring fine visual discrimination, such as reading small print, filling forms, navigating stairs, and driving, were associated with at least mild difficulty in most participants.

HADS responses: Psychological symptoms and emotional well-being

Table 4 showed HADS-A and HADS-D score among patients with OMG. The mean HADS-D

Table 2: Visual impairment based on VF-14 score in patients with OMG

VF-14 score	Visual impairment severity	n (%)
0 – 9	Very severe impairment	-
10 – 29	Severe impairment	-
30 – 74	Moderate impairment	7 (5.9)
75 – 92	Mild impairment	67 (56.8)
93 – 98	Slight impairment	13 (11.0)
99 – 100	No visual impairment	31 (26.3)

score was 4.92 (SD 4.12), with 51.7% of patients exhibiting depressive symptoms, while 48.3% scored within the normal range. In contrast, anxiety symptoms were uncommon, with a mean HADS-A score of 0.97 (SD 1.34); 98.3% of patients scored within the normal range (0–7) and only 1.7% had mild anxiety. No cases of severe depression or moderate to severe anxiety were observed.

Factors asociated with VF-14 and HADS scores

Multivariable regression analyses were performed to identify factors associated with VF-14 scores, with VF-14 used as the dependent variable (Table 5). In univariable analysis, marital status, monthly household income, living situation, disease duration, ptosis affecting appearance, best-corrected visual acuity, and diplopia were significantly associated with VF-14 scores. After adjustment, only disease duration and diplopia remained statistically significant. Longer disease duration was associated with better functional vision (adjusted OR = 0.75, 95% CI = 0.58–0.96, p = 0.022), while the presence of diplopia was associated with greater difficulty in vision-related activities (adjusted OR = 44.98, 95% CI = 9.66–209.55, p < 0.001).

Regression analyses examining psychological outcomes are summarized in Table 5. For depressive symptoms (HADS-D), age, sex, marital status, living situation, monthly income, ptosis affecting cosmesis, diplopia, ocular comorbidities, work impairment due to symptoms, and disease duration were significant in univariable analyses. In multivariable logistic regression, being single was associated with increased odds of depression (adjusted OR = 20.83, 95% CI = 2.98–145.49, p = 0.002). Work impairment due to OMG symptoms showed a strong association with depression (adjusted OR = 47.34, 95% CI = 3.67–610.37, p = 0.005), as did ptosis affecting cosmesis (adjusted OR = 24.17, 95% CI = 3.32–176.14, p = 0.002). In contrast, longer disease duration was protective, with each additional year reducing the odds of depression by 60% (adjusted OR = 0.40, 95% CI = 0.21–0.78, p = 0.009).

For anxiety symptoms (HADS-A), univariable linear regression demonstrated an inverse association with age (p < 0.001). Other factors associated with anxiety included race, marital status, household income, systemic comorbidities, disease duration, association with generalized MG, diplopia, ptosis affecting cosmesis, and work impairment. In multivariable analysis, younger age (p = 0.009), Malay ethnicity (p = 0.040), being single (p = 0.014), concurrent systemic illness (p = 0.002), and work impairment due to OMG symptoms (p = 0.017) remained significantly associated with higher anxiety scores.

DISCUSSION

This study evaluated functional vision disability, a key component of VRQoL, and psychological status among patients with OMG. Although BCVA was largely preserved, functional vision was influenced more by symptom burden than by acuity alone, with no significant association observed between BCVA and VF-14 scores. Many patients reported difficulty with tasks requiring binocular coordination and fine visual discrimination, particularly reading, navigating stairs, and driving, whereas tasks involving larger visual stimuli or lower precision demands were less affected. These findings reinforce the concept that a normal preserved visual acuity does not preclude meaningful functional visual impairment in OMG.

Psychological well-being in OMG is closely

Table 3: Item-level analysis of VF-14 responses in patients with OMG

VF-14 Items	Degree of Difficulty, n (%)						Mean (SD)	Average AS*
	Unable To Do (0)	Great Deal (1)	Moderate (2)	Little (3)	None (4)	Not Related		
Q1: reading small prints	-	-	4 (3.4)	75 (63.6)	39 (33.1)	-	3.30 (0.049)	82.50
Q2: reading newspaper or books	-	-	4(3.4)	69 (58.5)	45 (38.1)	-	3.35 (0.050)	83.75
Q3: reading large prints	-	-	-	22 (18.6)	96 (81.4)	-	3.81 (0.036)	95.25
Q4: recognize people when close	-	-	-	2 (1.7)	116 (98.3)	-	3.98 (0.012)	99.50
Q5: seeing steps and stairs	-	-	6 (5.1)	67 (56.8)	45 (38.1)	-	3.33 (0.053)	83.25
Q6: seeing traffic/ street/store signs	-	-	3 (2.5)	44 (37.3)	71 (60.2)	-	3.58 (0.050)	89.50
Q7: doing fine work	-	1 (0.8)	3 (2.5)	51 (43.2)	39 (33.1)	24 (20.3)	3.36 (0.062)	84.00
Q8: writing checks or filling forms	-	-	5 (4.2)	63 (53.4)	49 (41.5)	1 (0.8)	3.38 (0.053)	84.50
Q9: recognize coins or banknotes.	-	-	-	6 (5.1)	112 (94.9)	-	3.96 (0.020)	99.00
Q10: doing outdoor activities	-	-	1 (0.8)	30 (25.4)	87 (73.7)		3.73 (0.043)	93.25
Q11: cooking or preparing drinks	-	-	2 (1.7)	29 (24.6)	86 (72.9)	1 (0.8)	3.72 (0.045)	93.00
Q12: watching television	-	-	2 (1.7)	58 (49.2)	58 (49.2)	-	3.47 (0.049)	86.75
Q13: driving/ cycling/riding at daytime	-	1 (0.8)	4 (3.4)	50 (42.4)	50 (42.4)	13 (11)	3.42 (0.060)	85.50
Q14: driving/ cycling/riding at night	-	1 (0.8)	8 (6.8)	54 (45.8)	39 (33.1)	16 (13.6)	3.28 (0.064)	82.00
Total score**	0	3	42	620	932	55	**3.58 (0.087)**	**89.5**

*AS (Aggregate score) was calculated by multiplying mean item scores by 25, yielding a 0–100 scale.
**Total score represents pooled item-level responses across all VF-14 items, rather than patient-level composite scores.

linked to VRQoL, as fluctuating ptosis and diplopia affect not only functional vision but also self-perception and social participation.[7,8] In this study, emotional well-being assessed using the HADS revealed a dissociation between anxiety and depression scores, with depressive symptoms being more prevalent. This contrasts with earlier studies reporting comparable rates of depressive and anxiety among patients with MG, as nearly half of our participants reported mild to moderate depressive symptoms, while anxiety levels remained normal in most cases. Feelings of frustration, sadness, and social withdrawal are common and may intensify depressive symptoms.[19] In contrast, the lower anxiety scores observed in our Malaysian cohort may reflect cultural influences on self-reporting rather than a true absence of distress. Mental health stigma, limited awareness, and fear of judgment may lead under-recognition or under-

Table 4: HADS-A and HADS-D score among patients with ocular myasthenia gravis

Variable	HADS-D (Depression)	HADS-A (Anxiety)
Mean (SD)	4.92 (4.12)	0.97 (1.34)
Median	8.00	1.00
Range	0 – 13	0 – 8
Score (Severity), n (%)		
0 – 7 : Normal	57 (48.3)	116 (98.3)
8 – 10 : Mild	56 (47.5)	2 (1.7)
11 – 15 : Moderate	5 (4.2)	-
16 – 21 : Severe	-	-

Abbreviation: HADS-A, Hospital Anxiety and Depression Scale-Anxiety; HADS-D, Hospital Anxiety and Depression Scale-Depression; SD, standard deviation.

reporting of anxiety.[22] Additionally, anxiety-related sensations, such as dizziness or unease may be misattributed to neuromuscular fatigue[23], whereas depressive features, such as persistent sadness are more distinct and thus more likely to be acknowledged.[24]

Diplopia emerged as the strongest predictor of reduced VF-14 scores in this study. Although often intermittent, diplopia was significantly associated with lower VF-14 scores, underscoring its disproportionate impact on daily functioning. Previous studies have similarly shown that patients experiencing both ptosis and diplopia report worse QOL than those with ptosis alone.[8] Its effect was particularly evident in activities requiring sustained visual concentration or accurate depth perception[7], highlighting the importance of assessing task-specific functional limitations even when overall visual function appears relatively preserved. Interestingly, longer disease duration was associated with better functional vision, suggesting that adaptation, acceptance, and coping strategies may improve outcomes over time.[25] The relatively high proportion of patients reporting mild or no visual impairment may reflect adequate disease control, good treatment adherence, or compensatory strategies such as head positioning, prism use, or occlusion therapy to manage diplopia.[10,14]

Nevertheless, OMG continues to impose a significant psychological burden, largely driven by chronic fatigue, fluctuating symptoms, and the functional and psychosocial consequences of ocular manifestations affecting daily activities and self-esteem. Depressive symptoms were significantly associated with ptosis affecting cosmesis, GMG, work impairment and limited social support, highlighting the multifactorial nature of emotional vulnerability in OMG. Cosmetic concerns related to ptosis have been linked to negative self-perception and reduced psychological well-being in previous studies.[26] Although GMG was not the primary focus of this study, its association with greater disease severity may partly explain the higher psychological burden observed, consistent with previous studies.[14,27] Living arrangements also played an important role, with being single, unmarried or living alone associated with higher depressive symptoms.[9] This likely reflecting reduced access to emotional and instrumental support during periods of illness or functional decline.[13,14] In contrast, cohabitation may offer a protective effect by enhancing psychosocial well-being and facilitating adaptation to vision-related difficulties.[22,25,26]

The unpredictable nature of OMG symptoms and fear of generalization, together with the negative impact of MG-related functional limitations on employment and career progress may contribute to psychological distress.[28] Anxiety symptoms, in contrast to depressive, were more pronounced among younger patients, those with systemic comorbidities, and individuals whose work or appearance was affected by OMG symptoms. Malay ethnicity was also associated with higher anxiety scores, which may reflect underlying socioeconomic and sociocultural factors, including financial constraints and differences in healthcare access or treatment adherence.[22,29] The fluctuating ptosis causing intermittent pseudo-blindness together with diplopia can impair work performance, leading to absenteeism, reduced working hours, or job changes[12,13], which likely contribute to increased anxiety and emotional distress.

Several limitations should be acknowledged. The relatively small sample size may have limited statistical power and generalisability. In addition, the cross-sectional design provides only a snapshot of outcomes and does not capture changes over time. Future longitudinal

Table 5: Factors associated with VF-14 and HADS scores in ocular myasthenia gravis

Outcome Measure	Variables	Crude OR (95% CI)	p-value	Adjusted OR (95% CI)	p-value
VF-14	Age	0.99 (0.97, 1.014)	0.409		
	Duration of OMG	0.711 (0.61, 0.835)	<0.001	0.75 (0.58, 0.96)	0.022
	BCVA	30.61 (0.53, 1768.02)	0.098		
	Ptosis	2.31 (1.00, 5.31)	0.049	3.54 (0.71, 17.65)	0.123
	Diplopia	3.50 (9.99, 109.29)	<0.001	44.98 (9.66, 209.55)	<0.001
	Ocular comorbidities	1.23 (0.49,3.09)	0.667		
	Systemic comorbidities	0.56 (0.24, 1.30)	0.178		
HADS-D	Age	0.94 (0.92, 0.97)	<0.001	1.02 (0.93, 1.12)	0.726
	Sex	2.88 (1.34, 6.17)	0.007	2.82 (0.43, 18.49)	0.279
	Race	1.03 (0.40, 2.66)	0.945		
	Marital status	25.01 (9.40,66.53)	<0.001	20.83 (3.18, 136.45)	0.002
	Educational level	1.74 (0.74, 4.06)	0.203		
	Monthly household income	0.38 (0.18, 0.81)	0.012	0.35 (0.05, 2.25)	0.270
	Living situation	44.47 (5.78, 342.32)	<0.001	69.67 (0.96, 5035.35)	0.052
	Systemic comorbidities	1.50 (0.73, 3.10)	0.272		
	Ptosis affecting cosmesis	7.80 (3.34, 18.16)	<0.001	24.17 (3.15, 185.35)	0.002
	Symptoms affecting work	31.89 (6.94, 146.61)	<0.001	47.34 (3.14, 715.00)	0.005
	Duration of OMG (years)	0.61 (0.51, 0.74)	<0.001	0.60 (0.41, 0.88)	0.009
	Association with GMG	1.77 (0.60, 5.22)	0.301		
	AChR-antibody status	1.039 (0.49, 2.18)	0.921		
	BCVA	0.28 (0.00, 8.56)	0.465		
	Ocular comorbidities	0.39 (0.17, 0.89)	0.025	6.15 (0.26, 145.86)	0.261
	Diplopia	13.29 (3.80, 46.56)	<0.001	0.21 (0.02, 2.54)	0.222
HADS-A	Age	-0.03 (-0.40, -0.13)	<0.001	-0.02 (-0.04, -0.01)	0.009
	Sex	0.14 (-0..37, 0.63)	0.594		
	Race	-0.61 (-1.24, 0.02)	0.059	-0.61(-1.20,-0.03)	0.040
	Marital status	0.90 (0.44, 1.36)	<0.001	0.59 (0.12,1.05)	0.014
	Educational level	0.06 (-0.51, 0.63)	0.841		
	Monthly household income	-0.55 (-1.03, -0.06)	0.028	-0.42 (-0.88, -0.05)	0.078
	Living situation	-0.27 (-0.84, 0.31)	0.357		
	Systemic comorbidities	0.76 (0.30, 1.23)	0.002	0.74 (0.28, 1.20)	0.002
	Ptosis affecting cosmesis	0.73 (0.26,1.20)	0.003	0.16 (0.01, 1.753)	0.132
	Symptoms affecting work	0.93 (0.45, 1.41)	<0.001	0.34 (0.06, 0.62)	0.017
	Duration of OMG	-0.12 (-0.20, -0.40)	0.003	0.75 (0.55, 0.79)	0.074
	Association with GMG	0.50 (0.05,0.95)	0.030	0.43 (-0.01, 0.87)	0.053
	AChR-antibody status	0.17 (-0.33,0.68)	0.493		
	BCVA	-1.03 (-3.31, 1.25)	0.372		
	Ocular comorbidities	-0.30 (-0.83, 0.24)	0.280		
	Diplopia	0.53 (0.046, 1.01)	0.032	0.14 (0.01, 2.56)	0.185

Abbreviation: SLR, simple logistic regression; MLR, multiple logistic regression; OR, odds ratio;, CI, coefficient interval; OMG, ocular myasthenia gravis; GMG, generalised myasthenia gravis; AChR, acetylcholine receptor; BCVA, best-corrected visual acuity.
Result based on backward stepwise method. No multicollinarity and interaction. $p<0.05$, significant

studies involving larger and more diverse populations are needed to better understand the dynamic relationship between visual function, psychological well-being, and adaptation in OMG.

In conclusion, this study highlights the dual burden of OMG, in which patients experience both functional visual limitations and significant psychological distress despite preserved visual acuity. This dissociation underscores the need for integrated care. Routine screening for psychological symptoms, particularly in patients with diplopia, cosmetic concerns, or limited social support should be incorporated into clinical management to improve overall quality of life.

DISCLOSURE

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