Risk factors for depression in glaucoma patients

Vesna Marić[1,2], Marija Božić[1,2], Ivan Marjanović[1,2], Miroslav Stamenković[3,4]

[1]University Clinical Center of Serbia, Clinic for Eye Diseases, Belgrade, Serbia;
[2]University of Belgrade, Faculty of Medicine, Belgrade, Serbia;
[3]Zvezdara University Medical Center, Clinic for Eye Disease, Belgrade, Serbia;
[4]University of Belgrade, Faculty of Special Education and Rehabilitation, Belgrade, Serbia

SUMMARY

Introduction/Objective Glaucoma diagnosis often induces fear of vision loss and blindness, as well as concerns related to the lifelong use of eye drops and financial expenses, which can lead to certain emotional disorders, depression and anxiety in particular.
As these psychological disturbances usually coexist with physical disorders, the aim of the present study was to assess the risk factors for depression in patients with glaucoma.

Methods This cross-sectional study involved 132 consecutive glaucoma patients that were seen between September 2018 and December 2019 at the Glaucoma Department of Clinic for Eye Diseases, University Clinical Centre of Serbia, in Belgrade. All participants completed the Hamilton Depression Rating Scale and the Hamilton Anxiety Rating Scale to assess depression and anxiety, respectively.

Results The mean age of glaucoma patients was 65.67 ± 8.63 years, whereby the mean age in the group with depression/anxiety was 65.74 ± 7.6 / 64.67 ± 5.51. Prevalence of cardiovascular diseases and previous surgery was statistically significantly greater among glaucoma patients exhibiting depression relative to those that did not report any depressive symptoms (42.6% *vs*. 15.4%, 66.7% *vs*. 34.6%, respectively). On the other hand, these two groups were indistinguishable with respect to the evaluated ophthalmological parameters and the number of eye drops used to treat glaucoma.

Conclusion Our analyses revealed that low economic status, poor health, prevalence of cardiovascular diseases, history of surgeries, and non-beneficial lifestyle habits such as coffee consumption are the main risk factors for depression. However, none of the investigated clinical ophthalmological characteristics emerged as the risk factors for depression.

Keywords: glaucoma; depression; anxiety; rating scale

INTRODUCTION

Glaucoma is the leading cause of irreversible blindness worldwide and is, by its very nature, a chronic disease [1]. Upon receiving glaucoma diagnosis, most patients experience fear of vision loss and blindness, while also being concerned with the prospect of lifelong use of eye drops and associated material expenses. Moreover, they anticipate deterioration in their quality of life due to restrictions imposed on the range of physical activities they will be able to perform. In some cases, these issues are compounded by inadequate communication or poor understanding of medical terms, which can lead to certain emotional disorders, depression and anxiety in particular [2]. Anxiety and depression are two common forms of psychological disturbances that usually coexist with physical disorders. Thus, it is not surprising that patients with glaucoma have been found to be at an increased risk of developing depression and/ or anxiety following their diagnosis [3, 4, 5], as these conditions adversely affect the quality of life in patients with glaucoma [6]. Likewise, presence of depressive symptoms has been identified as an obstacle to glaucoma treatment adherence [7]. Hence, glaucoma patients need to be provided appropriate psychological care in order to improve their quality of life and compliance with medical advice. In order to detect, prevent, and treat the emotional problems that develop in patients with glaucoma, it is important to understand the risk factors for these psychological disturbances.

In the present study, the Hamilton Depression Rating Scale (HDRS) [8] was employed to assess depression in patients with glaucoma, while anxiety was assessed using the Hamilton Anxiety Rating Scale (HARS) [9]. HDRS is the most widely used clinician-administered depression assessment scale. The original version containing 17 items (HDRS17) was subsequently revised, leading to a 21-item version (HDRS21) which has become the gold standard for the assessment of depression in clinical practice.

In this study, we aimed to assess the risk factors for depression in patients with glaucoma.

METHODS

Study population

This cross-sectional study involved 132 consecutive glaucoma patients that were seen between September 2018 and December 2019

Correspondence to:
Vesna MARIĆ
Clinic for Eye Diseases
University Clinical Center of Serbia
Pasterova 2
11000 Belgrade
Serbia
vesnamaric21@gmail.com

at the Glaucoma Department of Clinic for Eye Diseases, University Clinical Centre of Serbia in Belgrade. Only individuals aged 40 years or older who have been receiving glaucoma treatment for at least six months were eligible for inclusion. Patients with primary open-angle glaucoma (POAG), normal tension glaucoma (NTG), primary angle-closure glaucoma (PACG) and secondary glaucoma which are not the result of any ocular or systemic disease, such as pseudoexfoliative glaucoma (XFG) and pigmentary glaucoma, were included in our research.

Exclusion criteria were: (1) presence of severe psychiatric illness (psychosis); (2) experience of a personal trauma such as death of a loved one, job loss in the last year, or recent divorce; (3) secondary glaucoma as a consequence of some other ocular/systemic disease; (4) current use of any medication that may result in a psychiatric disorder or cognitive impairment which could affect the psychological assessment, such as systemic use of β-blockers; and (5) presence of some other ocular disease that has led to a significant decrease in vision.

All subjects that met the study inclusion criteria received a detailed explanation of the study purpose and the nature of their involvement, and those that agreed to take part in the investigation signed an informed consent form, in accordance with the principles embodied in the Declaration of Helsinki. The study was reviewed and approved by the Ethics Committee of the University Clinical Center of Serbia, Belgrade.

Questionnaire

The data collection instruments employed in the present study included questionnaires eliciting relevant sociodemographic information, presence of any comorbidities and their characteristics, as well as the Serbian versions of the HDRS and HARS instruments for psychiatric evaluation.

The consultation started with a face-to-face interview conducted by the ophthalmologist, guided by a structured questionnaire probing into the patient's demographic data and medical history. Demographic data included age and gender, educational attainment, place of residence, employment status, marital status, self-reported economic situation, family history of glaucoma, and family history of psychiatric diseases. Information pertaining to systemic diseases, malignancies and previous surgeries was obtained through a review of patient's medical records and was verified/updated during the individual interview. All patients had their body weight and body height measured, allowing their body mass index (BMI) to be calculated.

Patients were also asked to respond to questions regarding pertinent lifestyle factors, namely smoking, alcohol and coffee consumption, and physical activity level.

The HDRS was used to assess depression, whereas anxiety was evaluated via the HARS. The original HDRS and HARS instruments were translated into Serbian language as well as back-translated to English to ensure that the original meaning was retained.

The HDRS comprises 21 items with the following scores, which determine the severity of depression:

< 8 − depression is not present
8−16 − mild depression
17−24 − moderate depression
> 24 − severe depression

The HARS consists of 14 items with the following scores, which determine the anxiety level:

< 14 − absence of anxiety
14−27 − mild anxiety
28−41 − moderate anxiety
42−56 − severe anxiety

Eye examinations

Ocular examination in all patients was performed by one ophthalmologist and included visual acuity (VA), slit-lamp biomicroscopy, gonioscopy, intraocular pressure (IOP) measurement (using Goldmann applanation tonometry) and fundus examination. A visual field test was performed using the Threshold C 24-2 Swedish Interactive Testing Algorithm standard program with Humphrey Visual Field Analyzer II (Carl Zeiss, Oberkochen, Germany). VA was measured by Snellen chart standing six meters away and was recorded as the logarithm of the minimum angle of resolution (logMAR). Indices of glaucoma severity were expressed numerically as vertical cup-to-disk ratio (VCDR), along with the staging of visual filed defects using Hodapp Classification, as well as visual field mean deviation (MD).

Statistical analysis

Categorical data were presented as absolute and relative values. Numerical variables were described using arithmetic mean with standard deviation or median with range (from minimum to maximum), depending on the data distribution. Distribution normality was evaluated by mathematical (Shapiro–Wilk and Kolmogorov–Smirnov tests, skewness and kurtosis, and coefficient of variation) and graphical (histogram, box-plot) methods. Study groups defined as glaucoma patients with (HDRS ≥ 8) and without (HARS < 8) depression were compared with respect to categorical variables using χ^2 test if the numerical criteria were met, and Fisher's exact test otherwise. For comparisons involving numerical variables, Student's t-test for independent samples or Mann–Whitey U test was adopted, depending on the data distribution. In order to evaluate factors that are potentially associated with the presence of depression among glaucoma patients, univariate and multivariate logistic regression modeling was used, reporting OR, 95% CI OR and p-value. All statistical analyses were performed in IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp, Armonk, NY, USA) whereby $p < 0.05$ was considered to denote statistical significance.

RESULTS

The study sample comprised 132 glaucoma patients with an average age of 65.67 ± 8.63 years, whereby the

mean age in the group with/without depression was 65.74 ± 7.61 / 65.62 ± 9.36, while in the anxiety group was 64.67 ± 5.51. Their median HDRS and HARS scores were 6.5 (0–22) and 4 (0–17), respectively for all glaucoma patients. Depression was identified in 54 (41%) glaucoma patients (HDRS ≥ 8), while only 11 (8%) individuals experienced anxiety (HARS ≥ 14), as shown in Table 1. Thus, due to the small number of patients with anxiety, the sample was segregated into those with and without depression for further analyses. The demographic characteristics of glaucoma patients with and without depression are presented in Table 2.

Table 1. Frequency of depression and anxiety in glaucoma patients

Depression/Anxiety	Depression n* (%)	Anxiety n* (%)
No symptoms	78 (60)	121 (92)
Mild	43 (32)	11 (8)
Moderate	10 (8)	0 (0)
Severe	1 (0)	0 (0)

Table 2. Socioeconomic characteristics of glaucoma patients with and without depression

Characteristics	Depression (n* = 54)	Without depression (n* = 78)	p*
Age (years), mean ± sd	65.74 ± 7.61	65.62 ± 9.36	0.953€
Male gender, n (%)	23 (42.6)	38 (48.7)	0.550£
BMI, mean ± SD	26.04 ± 3.34	27.80 ± 4.41	0.063€
Educational level, n (%)			0.500£
Secondary or lower	38 (70.4)	61 (78.2)	
Tertiary or higher	16 (29.6)	17 (21.8)	
Place of residence, n (%)			0.149£
urban	36 (66.7)	40 (51.3)	
rural	18 (33.3)	38 (48.7)	
Employment status, n (%)			0.225£
employed	5 (9.3)	16 (20.5)	
unemployed/retired	49 (90.7)	62 (79.5)	
Marital status, n (%)			0.054£
with partner	36 (66.7)	65 (83.3)	
without partner	18 (33.3)	13 (16.7)	
Self-reported economic situation, n (%)			0.023£
unsatisfying	33 (61.1)	2 (2.6)	
satisfying	21 (38.9)	76 (97.4)	

*for the 0.05 level of significance according to the Student's t-test (denoted by €) and χ² test (indicated by £)

Comorbidities of glaucoma patients identified in the subgroup exhibiting depression and the subgroup without depression are presented in Table 3.

Lifestyle habits and physical activity levels of glaucoma patients with and without depression are presented in Table 4.

Ophthalmological characteristics, type of glaucoma, and therapy received by two groups of glaucoma patients, with and without depression are presented in Table 5.

Table 3. Comorbidities of glaucoma patients in the subgroup exhibiting depression and the subgroup without depression

Comorbidity	Depression (n* = 54)	Without depression (n* = 78)	p*
DM status, n (%)	11 (20.4)	20 (25.6)	0.461£
DM therapy, n (%)			0.122£
oral	14 (25.9)	7 (9)	
insulin	34 (63)	62 (79.5)	
without therapy	6 (11.1)	9 (11.5)	
Cardiovascular diseases, n (%)	23 (42.6)	12 (15.4)	0.010£
SH, n (%)	39 (72.2)	53 (67.9)	0.846£
ACD, n (%)	3 (5.6)	0 (0)	0.163¥
Malignancies, n (%)	0 (0)	3 (3.8)	0.511¥
Previous surgery, n (%)	36 (66.7)	27 (34.6)	0.003£
Self-reported health status			0.020£
satisfying	31 (57.4)	75 (96.2)	
unsatisfying	23 (42.6)	3 (3.8)	

*for the 0.05 level of significance according to the Mann–Whitney U test §, χ² test £, and Fisher's exact test ¥;
DM – diabetes mellitus; SH – systemic hypertension; ACD – acute cerebrovascular disease

Table 4. The lifestyle habits and physical activity levels of glaucoma patients in the subgroup exhibiting depression and the subgroup without depression

Lifestyle factors	Depression (n* = 54)	Without depression (n* = 78)	p*
Smoking status, n (%)			0.595£
smoker	28 (51.9)	45 (57.7)	
non-smoker	26 (48.1)	33 (42.3)	
Alcohol consumption, n (%)	16 (29.6)	26 (33.3)	0.692£
Coffee consumption, n (%)	50 (92.6)	64 (82.1)	0.052£
Cups of coffee per day, Median (min–max)	3 (1–7)	2 (1–4)	0.038§
Physical activity, n (%)	20 (37)	24 (30.8)	0.617£
FHG, n (%)	21 (38.9)	22 (28.2)	0.370£
FHPD, n (%)	2 (3.7)	0 (0)	0.408¥

*for the 0.05 level of significance according to the Mann–Whitney U test § and χ² test £;
FHG – family history of glaucoma; FHPD – family history of psychiatric diseases

The results of univariate and multivariate logistic regression modeling with presence of depression as the dependent outcome are presented in Table 6.

DISCUSSION

As glaucoma is a chronic disease, it has been the focus of many studies exploring depression, which indicate that prevalence is high in individuals suffering from glaucoma, ranging from 10.9% to 24.7%, respectively, depending on the geographical region and investigated cohort [4, 10, 11]. For example, approximately 10% of glaucoma patients in America [4] and Japan [3] suffer from depression, whereas 12.1% prevalence was reported for Hungary [12] and 19.09% for Australia [13], and in Turkey the depression occurrence among glaucoma patients ranges from 24.66% [14] to 57% [6]. Depression was also found to affect 32.1% of patients with severe glaucomatous disease [13].

Table 5. Ophthalmological characteristics, type of glaucoma and therapy of glaucoma patients with and without depression

Characteristic	Depression (n* = 54)	Without depression (n* = 78)	p*
VA(LogMAR), median (min−max)			
Better eye	0 (0–2)	0 (0–1)	0.950§
Worse eye	0.15 (0–1.5)	0.15 (0–2)	0.543§
MD (dB), median (min−max)			
Better eye	-2.98 (-30.31 to 0.73)	-3.46 (-26.85 to -0.39)	0.550§
Worse eye	-7.60 (-27.91 to -0.75)	-11.78 (-28.80 to -1.32)	0.205§
Hodapp, better eye, n (%)			0.705£
early	35 (64.8)	57 (73.1)	
moderate	7 (13)	7 (9)	
advanced	12 (22.2)	14 (17.9)	
Hodapp, worse eye, n (%)			0.624£
early	22 (40.7)	25 (32.1)	
moderate	11 (20.4)	17 (21.8)	
advanced	21 (38.9)	36 (46.1)	
VCDR, median (min−max)			
Better eye	0.65 (0.2–1)	0.45 (0.3–1)	0.286§
Worse eye	0.80 (0–1)	0.88 (0–1)	0.683§
IOP (mmHg), mean ± SD	20 ± 8	18 ± 7	0.546§
Number of eye drop types used (min−max)	2 (0–3)	2 (1–4)	0.592§
Use of β-blockers, n (%)	38 (70.4)	73 (93.6)	0.009£
β-blocker use duration (y), median (min−max)	4 (0.2–15)	3 (0.1–30)	0.456§
Use of OCAI, n (%)	7 (12.9)	4 (5.1)	0.199£
History of glaucoma surgery, n (%)	10 (18.5)	14 (17.9)	0.862£
History of LI, n (%)	9 (16.7)	14 (17.9)	0.851£
Glaucoma type, n (%)			0.778£
secondary	16 (29.6)	26 (33.3)	
POAG and NTG	29 (53.7)	37 (47.5)	
PACG	9 (16.7)	15 (19.2)	

*for the 0.05 level of significance according to the Mann–Whitney U test § and χ² test £;
n* – number of patients; VA – visual acuity; IOP – intraocular pressure; MD – mean deviation; VCDR – vertical cup-to-disk ratio; y – years; OCAI – oral carbonic anhydrase inhibitors; LI – laser intervention; POAG – primary open-angle glaucoma; NTG – normal tension glaucoma; PACG – primary angle-closure glaucoma

Extant research also indicates that patients with glaucoma are at a significantly higher risk of developing depression compared with those that do not suffer from this condition [15]. This finding has prompted investigations into the risk factors that predispose glaucoma patients toward depression and anxiety. The aim of the present study was thus to contribute to this body of literature by identifying the main risk factors for depression in patients with glaucoma in our country. As far as we know, this was the first study in Serbia that examined risk factors for depression in glaucoma patients. However, due to the small number of patients that exhibited anxiety, it was not possible to establish its potential links with the examined sociodemographic and clinical characteristics.

Depression is a highly prevalent disease, projected to be one of the three main disease burdens by 2030 worldwide [16]. As previously noted, the main reason for depression among glaucoma patients is the chronic nature of this disease that leads to vision loss. Furthermore, depression has been found to be associated with patients' perception of vision; however, in contrast to subjective measures of visual perception, objective measures of function such as VA or visual field results have not been linked to depression [13]. In 2022, Wu et al. [17] reported that patients' self-reported vision-related quality of life (VR-QoL) played a much more important role in the emergence of psychiatric illnesses compared to objective visual function indices, such as MD and VA. In the present study, none of the objective measures of glaucoma severity or visual function – including VA, VCDR, staging of visual filed defects using Hodapp Classification and MD – were found to be significant predictors of depression while subjective measures of visual perception were not considered in our investigation. Similarly, both Wang et al. [4] and Wilson et al. [10] noted that objective measures of disease and visual function (such as VA, VCDR, and visual field defects) were not associated with depression among subjects with glaucoma, whereas most self-reported measures of visual disability were linked to depression. These findings suggest that objective measures of glaucoma severity may not be as important to the mental health of glaucoma patients as their perception of illness and disability. In 2019, Wu et al. [18] concluded that the deterioration of vision impairment and visual field defects, in addition to increased recognition of psychological

Table 6. Factors associated with depression according to univariate and multivariate logistic regression analysis

Factor	Univariate logistic regression			Multivariate logistic regression[a]		
	OR	95% CI OR	p	OR	95% CI OR	p
Self-reported economic situation	0.280	0.09−0.87	0.027	0.030	0.01−0.31	**0.003**
Cardiovascular diseases	0.255	0.09−0.75	0.013	0.191	0.03−1.32	0.094
Previous surgery	0.238	0.09−0.63	0.004	0.177	0.04−0.84	**0.029**
Self-reported health state	4.870	1.18−20.17	0.029	2.230	0.25−19.64	0.470
Use of β-blocker eye drops	5.727	1.41−23.34	0.015	17.397	1.84−164.28	**0.013**
HARS score	1.708	1.29−2.25	< 0.001	2.277	1.42−3.64	**0.001**

[a]adjusted for age and gender
HARS – Hamilton anxiety rating scale

disturbances, significantly reduces the VR-QoL of glaucoma patients. This view concurs with the opinion shared by many authors that depression severity is closely linked to the degree of visual impairment as a result of glaucoma [13, 15, 19]. The reason for this positive correlation is patients' concern regarding the potential future worsening of the visual functions [20]. Consequently, the more severe patients' glaucoma is, the more likely they are to be depressed, which is consistent with the conclusions reached by Shin et al. [2]. Faster visual loss progression was also recognized by other authors as the potential risk factor for depression in patients with glaucoma [21]. Extant research also indicates that patients that have suffered damage to the visual field but do not experience further progression tend to tolerate their condition much better than patients in whom visual field continues to worsen.

While some authors reported associations between the use of topical β-blockers and depression, others do not recognize this as a factor for the onset of depression [10, 22]. In the present study, topical β-blocker application was not identified as a factor in the development of depression. In fact, our analyses indicate that those who did not take β-blockers had a greater chance of developing depression.

In the pertinent literature, depression is typically viewed as a consequence of being diagnosed with a chronic disease [2]. As glaucoma is a chronic disease, its duration, its effect on VA, need for repeated application of eye drops, and number of previous glaucoma operations and laser interventions are expected to contribute to the onset of depression. However, in our cohort, neither the history of glaucoma surgery and laser interventions, nor the number of drops required, were the risk factors for depression.

Controversies exist regarding the variations in depression prevalence between different glaucoma types. In the present study, no such difference was found between POAG, PACG and secondary glaucoma, which is in accordance with the results reported by Zhang et al. [23], although the percentage of patients with POAG who had depression was the highest. On the other hand, Mabuchi et al. [3] demonstrated a link between POAG and prevalence of depression and anxiety. Conversely, Kong et al. [24] established significantly higher depression levels in PACG patients relative to POAG patients and controls.

Following their evaluation of the link between depression and pseudoexfoliation, Cumurcu at al. [14] reported that the HDRS scores were significantly higher in the XFG group compared with the POAG and the control group. These authors further noted that in each of the three examined groups, there was no correlation between the HDRS scores and any of the following parameters: duration of glaucoma, medical treatment, VA, IOP, perimetric stage, cup-disc ratio and number of glaucoma operations.

In our cohort, age and gender did not affect the likelihood of depression, countering the findings reported by Wilson et al. [10]. On the other hand, these authors did reach similar conclusions as those derived from our work with respect to VA, changes in the visual field, and β-blocker use, as neither emerged as a risk factor for

depression, although these authors gathered their data using The Center for Epidemiologic Studies Depression Scale (CES-D), Composite International Diagnostic Interview, and Short Form (CIDI-SF) questionnaires. It is also worth noting that, Chen et al. [15], indicating that older age and female glaucoma patients were at a greater risk of developing depression. These authors further noted that lower income was a significant risk factor for developing depression [15]. Our investigation led to a similar conclusion, as over 60% of analyzed glaucoma patients who showed symptoms of depression reported that they were dissatisfied with their economic situation compared to 3.8% who did not have symptoms of depression, while 97.4% were satisfied with their financial status and had no symptoms of depression. Our analyses of the relationship between depression and marital status similarly indicate that depression is more frequent in those without a partner, concurring with the results reported by Tastan et al. [6].

These findings could potentially indicate that absence of financial or emotional support may predispose people to depression which implies that economic burden and living alone may increase the risk of depression among glaucoma patients. Therefore, familial and social support are highly important for their psychological health.

Furthermore, depression is associated with unhealthy lifestyle behaviors, including smoking, drinking, and sedentary lifestyle [25]. According to the findings yielded by the present study, coffee consumption and self-reported dissatisfaction with one's health status were predictors for the onset of depression. On the other hand, BMI did not emerge as a statistically significant factor, but its greater values tended to be associated with lower depression scores.

In addition, presence of cardiovascular diseases significantly increased the risk for depression, concurring with the findings reported by other authors [26]. Available evidence further indicates that receiving a chronic disease diagnosis can prompt an onset of depression due to functional limitations, social isolation, loss of relationships, guilty feelings and anxiety about the future [11]. In our cohort, history of surgical interventions was also a significant predictor for the onset of depression.

It is also worth noting the anecdotal as well as empirical evidence [27] indicates that the recent COVID-19 pandemic has increased the frequency of depression and anxiety in most communities. However, as the present study was conducted before its onset, we can rule out COVID-19 infection as a possible risk factor for depression and/or anxiety.

When interpreting the results yielded by our investigation, it is important to note some study limitations, one of which is a small sample size especially those with anxiety. Moreover, we relied solely on the data gathered through self-report questionnaires when assessing our patients' depression and anxiety symptoms rather than considering a clinical diagnosis. However, the same approach has been adopted in a considerable body of research [3, 6, 10, 13, 14].

CONCLUSION

In conclusion, our analyses revealed that low economic status, poor health, presence of comorbidities such as cardiovascular diseases, history of surgeries, and non-beneficial lifestyle habits such as coffee consumption are the main risk factors for depression in glaucoma patients. However, none of the investigated clinical ophthalmological characteristics emerged as the risk factors for depression. In addition, owing to the small number of subjects in whom anxiety was identified through self-reported questionnaires,

it was not possible to establish any associations of demographic and clinical characteristics with anxiety. Further research into emotional disorders involving larger glaucoma patient cohorts is thus warranted. Nonetheless, the overarching message arising from this study is that, when treating glaucoma, ophthalmologists need to focus not only on the medical aspects of this condition, but must also provide psychological support to their patients.

Conflicts of interest: None declared.

REFERENCES

1. Kang JM, Tanna AP. Glaucoma. Med Clin North Am. 2021;105(3):493–510. [DOI: 10.1016/j.mcna.2021.01.004] [PMID: 33926643]
2. Shin DY, Jung KI, Park HYL, Park CK. The effect of anxiety and depression on progression of glaucoma. Sci Rep. 2021;11(1):1769. [DOI: 10.1038/s41598-021-81512-0] [PMID: 33469104]
3. Mabuchi F, Yoshimura K, Kashiwagi K, Shioe K, Yamagata Z, Kanba S, et al. High prevalence of anxiety and depression in patients with primary open-angle glaucoma. J Glaucoma. 2008;17(7):552–7. [DOI: 10.1097/IJG.0b013e31816299d4] [PMID: 18854732]
4. Wang SY, Singh K, Lin SC. Prevalence and predictors of depression among participants with glaucoma in a nationally representative population sample. Am J Ophthalmol. 2012;154(3):436–44.e2. [DOI: 10.1016/j.ajo.2012.03.039] [PMID: 22789562]
5. Musch DC, Niziol LM, Janz NK, Gillespie BW. Trends in and Predictors of Depression Among Participants in the Collaborative Initial Glaucoma Treatment Study (CIGTS). Am J Ophthalmol. 2019;197:128–35. [DOI: 10.1016/j.ajo.2018.09.015] [PMID: 30248311]
6. Tastan S, Iyigun E, Bayer A, Acikel C. Anxiety, depression, and quality of life in Turkish patients with glaucoma. Psychol Rep. 2010;106(2):343–57. [DOI: 10.2466/pr0.106.2.343-357] [PMID: 20524533]
7. Duong AT, Van Tassel SH. Depression and Glaucoma: A Review and Considerations for Researchers and Providers. Int Ophthalmol Clin. 2022;62(4):39–44. [DOI: 10.1097/IIO.0000000000000441] [PMID: 36170220]
8. Hamilton M. A rating scale for depression. J Neurol Neurosurg Psychiatry. 1960;23(1):56–62. [DOI: 10.1136/jnnp.23.1.56] [PMID: 14399272]
9. Hamilton M. The assessment of anxiety states by rating. Br J Med Psychol. 1959;32(1):50–5. [DOI: 10.1111/j.2044-8341.1959.tb00467.x] [PMID: 13638508]
10. Wilson MR, Coleman AL, Yu F, Fong Sasaki I, Bing EG, Kim MH. Depression in patients with glaucoma as measured by self-report surveys. Ophthalmology. 2002;109(5):1018–22. [DOI: 10.1016/s0161-6420(02)00993-4] [PMID: 11986112]
11. Rezapour J, Nickels S, Schuster AK, Michal M, Münzel T, Wild PS, et al. Prevalence of depression and anxiety among participants with glaucoma in a population-based cohort study: The Gutenberg Health Study. BMC Ophthalmol. 2018;18(1):157. [DOI: 10.1186/s12886-018-0831-1] [PMID: 29954361]
12. Holló G, Kóthy P, Géczy A, Vargha P. Personality traits, depression, and objectively measured adherence to once-daily prostaglandin analog medication in glaucoma. J Glaucoma. 2009;18(4):288–92. [DOI: 10.1097/IJG.0b013e318184856b9] [PMID: 19365193]
13. Skalicky S, Goldberg I. Depression and quality of life in patients with glaucoma: a cross-sectional analysis using the Geriatric Depression Scale-15, assessment of function related to vision, and the Glaucoma Quality of Life-15. J Glaucoma. 2008;17(7):546–51. [DOI: 10.1097/IJG.0b013e318163bdd1] [PMID: 18854731]
14. Cumurcu T, Cumurcu BE, Celikel FC, Etikan I. Depression and anxiety in patients with pseudoexfoliative glaucoma. Gen Hosp Psychiatry. 2006;28(6):509–15. [DOI: 10.1016/j.genhosppsych.2006.09.004] [PMID: 17088167]

15. Chen YY, Lai YJ, Wang JP, Shen YC, Wang CY, Chen HH, et al. The association between glaucoma and risk of depression: a nationwide population-based cohort study. BMC Ophthalmol. 2018;18(1):146. [DOI: 10.1186/s12886-018-0811-5] [PMID: 29929494]
16. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. PLoS Med. 2006;3(11):e442. [DOI: 10.1371/journal.pmed.0030442] [PMID: 17132052]
17. Wu N, Kong X, Sun X. Anxiety and depression in Chinese patients with glaucoma and its correlations with vision-related quality of life and visual function indices: a cross-sectional study. BMJ Open. 2022;12(2):e046194. [DOI: 10.1136/bmjopen-2020-046194] [PMID: 35190403]
18. Wu N, Kong X, Gao J, Sun X. Vision-related Quality of Life in Glaucoma Patients and its Correlations With Psychological Disturbances and Visual Function Indices. J Glaucoma. 2019;28(3):207–15. [DOI: 10.1097/IJG.0000000000001178] [PMID: 30624385]
19. Dayal A, Sodimalla KVK, Chelerkar V, Deshpande M. Prevalence of Anxiety and Depression in Patients With Primary Glaucoma in Western India. J Glaucoma. 2022;31(1):37–40. [DOI: 10.1097/IJG.0000000000001935] [PMID: 34474423]
20. Chun YS, Sung KR, Park CK, Kim HK, Yoo C, Kim YY, et al. Factors influencing vision-related quality of life according to glaucoma severity. Acta Ophthalmol. 2019;97(2):e216–e224. [DOI: 10.1111/aos.13918] [PMID: 30264446]
21. Stamatiou ME, Kazantzis D, Theodossiadis P, Chatziralli I. Depression in glaucoma patients: A review of the literature. Semin Ophthalmol. 2022;37(1):29–35. [DOI: 10.1080/08820538.2021.1903945] [PMID: 33822676]
22. Schweitzer I, Maguire K, Tuckwell V. Antiglaucoma medication and clinical depression. Aust N Z J Psychiatry. 2001;35(5):569–71. [DOI: 10.1080/0004867010060503] [PMID: 11551270]
23. Zhang D, Fan Z, Gao X, Huang W, Yang Q, Li Z, et al. Illness uncertainty, anxiety and depression in Chinese patients with glaucoma or cataract. Sci Rep. 2018;8(1):11671. [DOI: 10.1038/s41598-018-29489-1] [PMID: 30076311]
24. Kong X, Yan M, Sun X, Xiao Z. Anxiety and Depression are More Prevalent in Primary Angle Closure Glaucoma Than in Primary Open-Angle Glaucoma. J Glaucoma. 2015;24(5):e57–63. [DOI: 10.1097/IJG.0000000000000025] [PMID: 24240874]
25. Jung Y, Han K, Wang SM, Yoon HY, Moon JI. Effect of depressive symptom and depressive disorder on glaucoma incidence in elderly. Sci Rep. 2021;11(1):5888. [DOI: 10.1038/s41598-021-85380-6] [PMID: 33723349]
26. Li C, Woo T, Ganesananthan S. What Is the Association Between Depression and Cardiovascular Disease? JAMA Psychiatry. 2020;77(12):1307–8. [DOI: 10.1001/jamapsychiatry.2020.3219] [PMID: 33026412]
27. COVID-19 Mental Disorders Collaborators. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. Lancet. 2021;398(10312):1700–12. [DOI: 10.1016/S0140-6736(21)02143-7] [PMID: 34634250]

Фактори ризика за депресију код болесника са глаукомом

Весна Марић[1,2], Марија Божић[1,2], Иван Марјановић[1,2], Мирослав Стаменковић[3,4]

[1]Универзитетски клинички центар Србије, Клиника за очне болести, Београд, Србија;
[2]Универзитет у Београду, Медицински факултет, Београд, Србија;
[3]Клиничко-болнички центар „Звездара", Клиника за очне болести, Београд, Србија;
[4]Универзитет у Београду, Факултет за специјалну едукацију и рехабилитацију, Београд, Србија

САЖЕТАК

Увод/Циљ Дијагноза глаукома веома често је повезана са страхом од губитка вида и слепила, са једне стране, те доживотним коришћењем капи и материјалним издацима, са друге стране, што све заједно може да доведе до одређених емоционалних поремећаја, од којих су најчешћи депресивност и анксиозност.

Циљ овог рада био је испитати факторе ризика за депресију код болесника са глаукомом.

Методе Студија је спроведена на Клиници за очне болести Универзитетског клиничког центра Србије у Београду, у периоду од септембра 2018. године до децембра 2019. године. Користили смо Хамилтонову скалу за процену депресивности и Хамилтонову скалу за процену анксиозности.

Резултати Просечна старост свих болесника била је 65,67 ± 8,63 година, док је у групи са депресијом/анксиозношћу била 65,74 ± 7,6 / 64,67 ± 5,51. Присуство кардиоваскуларних болести и број претходних операција било је статистички учесталије код болесника који су имали симптоме депресије у односу на оне без њих (42,6% наспрам 15,4%, 66,7% наспрам 34,6%). Испитиване офталмолошке клиничке карактеристике и број капи које су болесници користили нису били фактори ризика за симптоме депресије.

Закључак У нашој студији општи предиктори за депресију били су лоша економска ситуација, лоше здравствено стање, коморбидитети као што је присуство кардиоваскуларних болести, број претходних операција, затим лоше животне навике, као што је превелико конзумирање кафе. Ниједна од испитиваних офталмолошких клиничких карактеристика није била фактор ризика за депресивност.

Кључне речи: глауком; депресија; анксиозност; скале испитивања