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Review

Quality of life study in ophthalmic practice

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The article discusses various methods for studying the quality of life in all kinds of eye diseases. General and special questionnaires used in modern ophthalmological practice are presented. The presence of a sufficiently large amount of data indicating the relationship between the quality of life and objective indicators of the visual system was established. A fairly good comparability of results obtained in the assessment of various quality of life questionnaires in a patient with ophthalmic condition was revealed.

Keywords: quality of life; ophthalmic condition; ophthalmic questionnaires.

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Обзорная статья

Исследование «качества жизни» в офтальмологической практике

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В статье рассмотрены различные методы исследования качества жизни при всевозможных заболеваниях органа зрения. Представлены общие и специальные опросники, применяющиеся в современной офтальмологической практике. Установлено наличие большого объёма данных, указывающих на взаимосвязь между качеством жизни и объективными показателями зрительной системы. Выявлена достаточно хорошая сопоставимость результатов, полученных при оценке различных опросников качества жизни, у пациента с офтальмопатологией.

Ключевые слова: качество жизни; патология органа зрения; офтальмологические опросники.

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BACKGROUND

The humanistic aim of the medical activity in any field is not the prolongation, and maintenance of the life rather it is providing the patient (if possible) with happier and more productive daily professional and household activities. In accordance with the principles of the evidence-based medicine, the main criteria for evaluating the efficiency of the treatment should be clinically significant results and outcomes of the treatment. At the same time, the investigation of the quality of life (QoL) reflects the degree of social adaptation of patients as the goal of the treatment and rehabilitation process. According to the generally accepted opinion, positive changes in therapy or in biomedical parameters indicate an improvement in the patient's QoL. Even though this statement is true in many cases, in several clinical situations, when assessing the QoL of the patient, the results turn out to be unexpected, which determines the need to confirm this statement with special studies [1]. Currently, in a clinical practice, the results of a subjective assessment of the QoL reported by patients are of increasing interest and are actively used to record the impact of intervention or that of loss of the function. At the same time, the use of the psychometric characteristics such as significance, validity, and responsiveness to assess the QoL, is of great importance to ensure the validity of the data collected [2]. It is important to note the presence, both in the Russian Federation and other countries, of actively functioning organizations, that ensure the development, testing, and implementation of the QoL questionnaires in various fields of medical practice [3–5].

The current stage of development of ophthalmology is characterized by a significant expansion of the range of the diagnostic methods for studying the functional state of the visual analyzer. The introduction into the ophthalmological practice of instrumental methods for assessing the state of anterior and posterior segments of the eye, ocular blood flow, and morpho-functional aspects of individual structures of the eye, enabled to increase fundamentally the clinical efficiency of the diagnostic process, both from the standpoint of the primary detection of the pathological changes, and within the case follow-up and (or) evaluation of the results of therapeutic measures. At the same time, a significant increase in the diagnosis objectivity reduced the significance of assessing the patient's subjective status. Meanwhile, it seems obvious that the leading factor for a patient is often not the presence of specific disorders of the visual system, but rather a change in a visual perception, spatial visual orientation, and, ultimately, improvement of the QoL [6–8].

This work aimed to perform a review of literature on proven methods for the QoL assessment in ophthalmic practice.

Analysis of "general" and "special" questionnaires for assessing the QoL of a patient in ophthalmic practice

The performed analysis indicates a large volume of questionnaires that assess the QoL of a patient with various ophthalmic diseases. It should be noted that the questionnaires reflect either general aspects of the patient's professional and everyday life ("general" questionnaires) or are based on an assessment of the patient's complaints in case of a certain ophthalmic disease or a group of the same type of diseases ("special" questionnaires). The main objective of this review was not so much to describe the questions and to interpret the results of questionnaires, but to assess the clinical efficiency of their use in the ophthalmological practice.

The most relevant general ophthalmological questionnaire is National Eye Institute Visual Function Questionnaire (NEI-VFQ) developed in the middle of the 1990s by the scientists from the National Eye Institute (USA). At the same time, there are various versions of this questionnaire, differing in the total number of questions (25, 39, or 51). This questionnaire was applied in practice in patients with an age-related macular degeneration [9–13], vitreoretinal conditions [14–17], myopia [18], cataract [19–21], glaucoma [22–24], keratoconus [25], dry eye syndrome [26], and several other ophthalmic diseases.

The practical implications of the NEI-VFQ should be emphasized. For example, a comparative assessment of patients with emmetropia, myopia, and stable stages of keratoconus did not reveal significant differences in the QoL, especially on a sociological subscale ("social functioning," "role difficulties"). At the same time, the QoL significantly decreased in patients with progressive keratoconus (including those after corneal crosslinking). The authors conclude that, due to the high level of QoL in the patients with an early-stage keratoconus and a pronounced decrease after its progression without crosslinking, the current strategies of performing this procedure only after the diagnosis of progression is established, should be reconsidered [27].

The comparative assessment and analysis of the QoL and visual status in groups of patients with different types of mechanical eye injury [28], determined the expediency of clarifying the patient's subjective assessment of his condition as early as at the stage of hospital admission, to be able to trace the changes in the QoL in future, responding to them in a timely manner, and making changes in the treatment approach during the post-traumatic period. The authors conclude that pain syndrome and psychological stress in patients after trauma require increased attention from the specialists, to determine the recovery strategy. An individual approach ensures the competent use of the questionnaires as tools for assessing the QoL.

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It should also be noted that the NEI-VFQ is also used for research purposes. In this regard, the findings of an investigation [29], aimed to perform a comparative assessment of the QoL and macular pigment optical density (MPOD) in healthy volunteers, are of undoubtful practical interest. The responses to each question on the questionnaire were graded from low (no restriction) to high (very severe restriction) ranges. The results showed that, while the average response was "no restriction" for most (22/25) questions in the questionnaire, responses were slightly higher for two questions regarding the eye discomfort, and one question related to driving at night. MPOD levels were significantly higher in individuals who reported no discomfort in or around the eyes, than in those who reported mild discomfort. There was also a trend toward higher levels of MPOD in the individuals who reported that pain in or around their eyes never limited their activity, and in individuals who did not report problems in driving at night. The authors conclude that a higher level of MPOD reduces both the effects of "veiling" and uncomfortable glare among patients.

Along with the NEI-VFQ questionnaire, the "general" VF-14 (Visual Function) questionnaire is used in the ophthalmic practice [30, 31]. The practical application of this questionnaire enabled to develop an algorithm for choosing the method of surgical treatment in patients with cataracts and asteroid hyaloids, considering the state of the posterior hyaloid membrane [32].

There are much more developed and tested in clinical practice "special" questionnaires aimed at assessing the QoL in cataract [33–37], glaucoma [38–41], state after excimer laser surgery [42–44]. Along with this, the literature presents the questionnaires developed for patients with vitreoretinal conditions [45], allergic conjunctivitis [46, 47], computer vision syndrome [48–50], strabismus [51], amblyopia [52, 53], dry eye syndrome [54–57], diabetic retinopathy [58], age-related macular degeneration [59], endocrine ophthalmopathy [60], and several other eye diseases. A detailed description of each questionnaire was not included in the objectives of this article and is presented in the literature sources mentioned above.

General assessment of the investigation of patient's QoL in ophthalmological practice

Assessing the state of the problem of investigating QoL in ophthalmological practice, the following three fundamental aspects should be highlighted. The first aspect is related to the presence of a sufficiently large amount of data, indicating the presence of a statistically significant correlations between the QoL and objective indicators of the visual system. At the same time, it is important to emphasize that this aspect is revealed both at the stage of the patient's initial examination and in the process of treatment and rehabilitation measures. In this regard, the results of the study [19] should be emphasized especially, because it aimed to assess the QoL (according to the NEI-VFQ-25 questionnaire) in adult patients with a history of primary congenital glaucoma. The results obtained by the authors indicated that the lowest score belonged to the "mental health" scale, and the highest score belonged to the "color vision" scale. At the same time, a significant effect of the visual field defects was established in many subscales, including the "general health" and "general vision" ones. The mean visual field defect was statistically significantly associated with low scores in the "social functioning" and "peripheral vision" scales, which in total allowed the authors to formulate a conclusion about the presence of a relationship between visual field defects and many points in the subscales in the QoL assessment questionnaire applied.

In this direction (considering the general epidemiological situation), a study [61] should be noted, which assessed the impact of the quarantine during the COVID-19 pandemic on the QoL of patients with allergic conjunctivitis (according to a special Eye Allergy Patient Impact Questionnaire, EAPIQ). The results of this work showed that the symptoms of ocular allergy affect many functional and emotional aspects of the patient's daily activities. The authors revealed that the severity of the impact of the allergic conjunctivitis on the patient's QoL was moderate, which suggests a low significance of the influence of the quarantine factor during the COVID-19 pandemic, on the clinical and subjective manifestations of the allergic process.

Along with this, another study [62] determined the relationship of several visual indicators (visual acuity, contrast sensitivity, visual field) with the scales "social functioning," "mental health," and "role difficulties" (NEI-VFQ-25) of glaucoma patients. The study [11] determined a clear relationship between morphological aspects of retinal detachment (incomplete perifoveal detachment, incomplete parafoveal detachment, incomplete foveal detachment, complete foveal detachment, complete parafoveal detachment, complete perifoveal detachment), and QoL (according to the NEI-VFQ-25 questionnaire). The use of a special questionnaire (GQL-15) in glaucoma patients enabled (based on correlations with visual field and contrast sensitivity) to substantiate the optimal tactics of daily administration of ophthalmic medications [63].

The second aspect indicates the relationship between the examination of the patient's QoL from the standpoint of clinical and economic analysis in ophthalmology [64]. Currently, the assessment of the relationship between the QoL and medical and economic indicators is widely used in treatment of patients with diseases that demand a constant use of drugs (glaucoma, age-related macular degeneration, ophthalmic oncology, and several others) [65–67]. At which point, it was shown that in patients with age-related macular degeneration treated with vascular endothelial growth factor inhibitors (anti-VEGF),

the lowest QoL level (according to the special socio-economic questionnaire HRQoL) was noted before the treatment's start, and the highest level was registered 6 months after the start of treatment (with a total follow-up of 12 months). At the same time, both the ophthalmic (best corrected distance visual acuity) and socio-psychological (income level, depression, social support) indicators were most associated with the QoL [68].

In this field, a study [22] should be especially noted, in which a comprehensive assessment of the cost (questionnaire EQ5D) and of the QoL (questionnaire NEI-VFQ-25) was performed in glaucoma patients of urban and rural populations. The data obtained by the author indicate that non-compliance with the treatment regimen is a serious problem, especially in rural areas, where >50% of the patients may not return for follow-up visits. Although in most cases, medical therapy is the first line of treatment, the cost of maintaining it is up to 25% of the patient's income. Glaucoma significantly reduces the performance of both questionnaires studied. According to the authors, the obtained results are of a great importance for healthcare planners seeking to determine cost effective and acceptable methods for both glaucoma detection and treatment, as this disease belongs to the leading causes of low vision and blindness.

The third aspect defines the relationship of tested questionnaires, as well as the principles for developing promising questionnaires. An analysis of the literature data indicates a rather good comparability of the results obtained when evaluating various QoL questionnaires in a patient with ophthalmic diseases, including the adaptation of an already tested questionnaire to a specific state language [69–71]. When developing prospective questionnaires, it should be considered that this process is based on several stages, with the ultimate aim of describing the condition that will be the subject of assessment as accurately and completely as possible, followed by a statistical confirmation of the significance, reliability, and sensitivity of the tool created, as well as of criteria for meaningful and constructive validity [72–74].

CONCLUSION

The relevance of QoL investigations in ophthalmology is due to the implementation of new humanistic approaches to medical practice. At the same time, the conducted studies indicate a high efficiency of including the assessment of the patient's QoL in the complex of standard clinical and functional methods for examining the patient's visual system.

ADDITIONAL INFORMATION

Author contributions. All authors confirm that their authorship complies with the international ICMJE criteria (all authors have made a significant contribution to the development of the concept, research, and preparation of the article, as well as read and approved the final version before its publication). I.G. Ovechkin developed the concept and design for the study, was involved in the final preparation of the article draft for publication; E.I. Kovrigina collected the data and wrote this article; M.E. Konovalov developed the concept and design for the study, was involved in the final preparation of the article draft for publication; V. Kumar developed the concept and design for the study, and collected the data.

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REFERENCES

1. Novik AA, Ionova TI. Otsenka kachestva zhizni bol'nogo v meditsine. *Clinical Medicine.* 2002;(2):10–12. (In Russ.)

2. Terheyden JH, Finger RP. Vision-related Quality of Life with Low Vision — Assessment and Instruments. *Klin Monbl Augenheilkd.* 2019;236(3):261–268. DOI: 10.1055/a-0838-5810

3. Davydov SV. Meditsinskie aspekty kachestva zhizni u bol'nykh gipertonicheskoi bolezn'yu. *Kazan Medical Journal*. 2001;82(1): 35–37. (In Russ.)

4. Beloborodova EhI, Alekseeva AS, Lambrova EG, Filippova LP. Psikhosomaticheskie rasstroistva u bol'nykh s khronicheskimi zabolevaniyami pecheni. *Sibirskii vestnik gastroehnterologii i gepatologii*. 2006;20:134–137. (In Russ.)

5. Sidorenko BA, Semenyuk OA, Bugrimova MA, et al. Mathematical model of the heart muscle functioning level estimation before coronary artery bypass surgery. *Kuban scientific medical bulletin*. 2015;(5): 109–113. (In Russ.) DOI: 10.25207/1608-6228-2015-5-109-113

6. Malyshev AV, Karapetov GYu, Semykin VD, et al. Methods for assessing the quality of life of the patient in ophthalmic practice. *Sovremennaya optometriya*. 2015;(7):34–39. (In Russ.)

7. Bian W, Wan J, Smith G, et al. Domains of health-related quality of life in age-related macular degeneration: a qualitative study in the Chinese cultural context. *BMJ Open.* 2018;8(4): e018756. DOI: 10.1136/bmjopen-2017-018756

8. Assi L, Rosman L, Chamseddine F, et al. Eye health and quality of life: an umbrella review protocol. *BMJ Open.* 2020;10(8): e037648. DOI: 10.1136/bmjopen-2020-037648

9. Bian W, Wan J, Tan M, et al. Predictors of health-related quality of life in Chinese patients receiving treatment for neovascular age-related macular degeneration: a prospective longitudinal study. *BMC Ophthalmol.* 2020;20(1):291. DOI: 10.1186/s12886-020-01561-3

10. Eskina EN, Belogurova AV, Stepanova MA. Clinical effectiveness of Nutrof Total supplement for dry age-related macular degenera-

tion. *Russian Ophthalmological Journal*. 2016;9(2):90–95. (In Russ.) DOI: 10.21516/2072-0076-2016-9-2-90-95

11. Ng H, Vermeer KA, van Meurs JC, La Heij EC. Visual Acuity Inadequately Reflects Vision-Related Quality of Life in Patients After Macula-Off Retinal Detachment Surgery. *Invest Ophthalmol Vis Sci.* 2020;61(10):34. DOI: 10.1167/iovs.61.10.34

12. Loskutov IA. Results of Lucentis use as a routine practice in wet age-related macular degeneration patients. *Ophthalmology journal*. 2014;7(1):47–57. (In Russ.) DOI: 10.17816/OV2014147-57

13. Astakhov YS, Shaar GB, Dal' NY. Influence of vitrectomyon the progressionof wet age related macular degeneration. *Ophthalmology journal*. 2014;7(4):13–21. (In Russ.) DOI: 10.17816/OV2014413-21

14. Zhuravleva LV. Otsenka kachestva zhizni bol'nykh vozrastnoi makulyarnoi degeneratsiei po rezul'tatam ikh lecheniya preparatom Lyutein forte. *Russian Medical Journal*. 2012;20(1):11–14. (In Russ.)

15. Malyshev AV, Karapetov Glu. Effect of surgery on quality of life in patients with epiretinal membrane. *The Russian annals of ophthalmology*. 2015;131(1):30–35. (In Russ.) DOI: 10.17116/oftalma2015131130-35

16. Sergienko AA, Malyshev AV, Apostolova AS. The Main Patterns of Disorders of the Visual System in Patients with Retinal Detachment in Pediatric and Adult Practice in Terms of the Level of Antioxidant Protection. *Ophthalmology in Russia*. 2021;18(1):152–156. (In Russ.) DOI: 10.18008/1816-5095-2021-1-152-156

17. Al-Rashid ZZ, Malyshev AV, Lysenko OI. Quality of life changes after surgical treatment of retinal detachment. *Ophthalmology journal*. 2014;7(2):23–29. (In Russ.) DOI: 10.18008/1816-5095-2021-1-152-156

18. Queirós A. Quality of life of myopic subjects with different methods of visual correction using the NEI RQL-42 questionnaire. *Eye Contact Lens.* 2012;38(2):116–121. DOI: 10.1097/ICL.0b013e3182480e97

19. Kirwan C, Lanigan B, O'Keefe MJ. Vision-related quality of life assessment using the NEI-VFQ-25 in adolescents and young adults with a history of congenital cataract. *Pediatr Ophthalmol Strabismus.* 2012;49(1):26–31. DOI: 10.3928/01913913-20110517-02

20. He L, Cui Y, Tang X, et al. Changes in visual function and quality of life in patients with senile cataract following phacoemulsification. *Ann Palliat Med.* 2020;9(6):3802–3809. DOI: 10.21037/apm-20-1709

21. Alchinova AS, Morina KY, Rakhmanov VV, et al. Comparison of visual function and patient satisfaction with AcrySof ReSTORSN6AD1 multifocal intraocular compared to monofocal intraocular lenses 5. *Ophthalmology journal*. 2016;9(4):5–12. (In Russ.) DOI: 10.17816/OV20164

22. Murdoch I, Smith AF, Baker H, et al. The cost and quality of life impact of glaucoma in Tanzania: An observational study. *PLoS One.* 2020;15(6): e0232796. DOI: 10.1371/journal.pone.0232796

23. Miraftabi A, Coleman AL, Nilforushan N, et al. Vision-related quality of life in patients with a history of congenital glaucoma. *Eur J Ophthalmol*. 2020. DOI: 10.1177/1120672120977354

24. Belikova EI, Sharova GA. A Personalized Approach to the Treatment of Patients with Latent Stage Angle-Closure Glaucoma. *Ophthalmology in Russia*. 2020;17(3s):566–571. (In Russ.) DOI: 10.18008/1816-5095-2020-3S-566-571

25. Panthier C, Moran S, Bourges JL. Evaluation of vision-related quality of life in keratoconus patients, and associated impact of keratoconus severity indicators. *Graefes Arch Clin Exp Ophthalmol.* 2020;258(7):1459–1468. DOI: 10.1007/s00417-020-04680-1

26. Khabbazi A, Ebrahimzadeh Attari V, Asghari Jafarabadi M, Malek Mahdavi A. Quality of Life in Patients With Behçet Disease and Its Relation With Clinical Symptoms and Disease Activity. *Reumatol Clin.* 2021;17(1):1–6. DOI: 10.1016/j.reuma.2019.03.002

27. Steinberg J, Bußmann N, Frings A, et al. Quality of life in stable and progressive 'early-stage' keratoconus patients. *Acta Ophthalmol.* 2021;99(2): e196–e201. DOI: 10.1111/aos.14564

28. Kochergin SA, Sergeeva ND. The comparative analysis of indicators of quality of life and eyesight capacity among the patients after different types of eye mechanical injury. *Ophthalmology in Russia.* 2012;9(3):77–80. (In Russ.) DOI: 10.18008/1816-5095-2012-3-77-80

29. Wilson MR, Sandberg KA, Foutch BK. Macular pigment optical density and visual quality of life. *J Optom.* 2021;14(1):92–99. DOI: 10.1016/j.optom.2020.07.008

30. Kishimoto F, Ohtsuki H. Comparison of VF-14 scores among different ophthalmic surgical interventions. *Acta Med Okayama.* 2012;66(2):101–110. DOI: 10.18926/AMO/48260

31. Boiko A.V., Syisoev V.N., Novik A.A., Kuzmitchova O.V. Quality of life and phsychological status of patients suffering from glaucoma and cataract. *Glaucoma.* 2010;(1):21–25. (In Russ.)

32. Korotkikh SA, Grinev AG, Sviridova MB, Danilov AM. Development of Algorithm of Surgical Treatment Choice in Patients with Cataract and Asteroid Hyalosis. *Ophthalmology in Russia.* 2020;17(3):361–367. (In Russ.) DOI: 10.18008/1816-5095-2020-3-361-367

33. Isakova IA, Dzhashi BG, Aksenov VP. Gendernyi priznak v udovletvorennosti patsientov rezul'tatami khirurgicheskogo lecheniya katarakty s implantatsiei mul'tifokal'noi IOL. *Vestnik Orenburg State University*. 2011;14(133):156–157. (In Russ.)

34. McAlinden A, Gothwal V, Khadka J, et al. Head-to-head comparison of 16 cataract surgery outcome questionnaires. *Ophthalmology.* 2011;118(12):2374–2381. DOI: 10.1016/j.ophtha.2011.06.008

35. Lundström M, Pesudovs KJ. Questionnaires for measuring cataract surgery outcomes. *Cataract Refract Surg.* 2011;37(5):945–959. DOI: 10.1016/j.jcrs.2011.03.010

36. Chatziralli IP, Sergentanis TN, Peponis VG, et al. Risk factors for poor vision-related quality of life among cataract patients. Evaluation of baseline data. *Graefes Arch Clin Exp Ophthalmol.* 2013;251(3): 783–789. DOI: 10.1007/s00417-012-2194-2

37. Fraser ML. Vision, quality of life and depressive symptoms after first eye cataract surgery. *Psychogeriatrics.* 2013;46(9):16–18. DOI: 10.1111/psyg.12028

38. Azoulay-Sebban L, Zhao Z, Zenouda A, Lombardi M. Correlations Between Subjective Evaluation of Quality of Life, Visual Field Loss, and Performance in Simulated Activities of Daily Living in Glaucoma Patients. *J Glaucoma.* 2020;29(10):970–974. DOI: 10.1097/IJG.0000000000001597

39. Nelson P, Aspinall P, Papasouliotis O. Quality of life in glaucoma and its relationship with visual function. *J Glaucoma.* 2003;12(1): 139–150. DOI: 10.1097/00061198-200304000-00009

40. Janz NK, Wren PA, Lichter PR. Quality of life in newly diagnosed glaucoma patients: the Collaborative Initial Glaucoma Treatment Study patterns and correlates over time. *Ophthalmology.* 2007;114(11):2213–2220. DOI: 10.1016/s0161-6420(00)00624-2

41. Tripop S, Pratheepawanit N, Asawaphureekorn S. Health Related Quality of Life Instruments for Glaucoma. *J Med Assoc Thai.* 2005;88(1):26–28.

42. Pesudovs K, Garamendi E, Elliott DB. The Quality of Life Impact of Refractive Correction (QIRC) questionnaire: development and validation. *Optom Vis Sci.* 2004;8(5):769–777. DOI: 10.1097/00006324-200410000-00009

43. Garamendi E. The Refractive Status and Vision Profile: evaluation of psychometric properties and comparison of Rasch and summated Likert-scaling. *Vision Res.* 2006;46(8–9):1375–1383. DOI: 10.1016/j.visres.2005.07.007

44. Trubilin VN, Ovechkin IG, Pozharitsky MD, et al. The study of quality of life after excimer laser operations. *Sovremennaya optometriya*. 2012;5:38–43. (In Russ.)
45. Ovechkin IG, Malyshev AV, Karapetov GYu, et al. Comparative Evaluation of the Different Assessment Methods of Life Quality in Patients with Vitreoretinal Pathology. *Ophthalmology in Russia*. 2015;12(4): 75–79. (In Russ.) DOI: 10.18008/1816-5095-2016-4-265-272
46. Kandel H, Watson SL. Quality-of-life researchers in ocular allergy may benefit from the newer methods. *J Allergy Clin Immunol Pract*. 2021;9(1):595–596. DOI: 10.1016/j.jaip.2020.09.067
47. Artesani MC, Esposito M, Sacchetti M, et al. Health-related quality of life in children at the diagnosis of Vernal Keratoconjunctivitis. *Pediatr Allergy Immunol.* 2021. DOI: 10.1111/pai.13520
48. Proskurina OV, Tarutta EP, Iomdina EN, et al. A modern classification of asthenopias: clinical forms and stages. *Russian Ophthalmological Journal.* 2016;9(4):69–73. (In Russ.) DOI: 10.21516/2072-0076-2016-9-4-69-73
49. Korotkikh SA, Nikiforova AA. Issledovanie nadezhnosti i validnosti ankety kolichestvennoi otsenki astenopicheskikh zhalob komp'yuternogo zritel'nogo sindroma. *Sovremennaya optometriya*. 2017;(8(108)):29–33. (In Russ.)
50. González-Pérez M, Susi R, Antona B, et al. The Computer-Vision Symptom Scale (CVSS17): development and initial validation. *Invest Ophthalmol Vis Sci.* 2014;55(7):4504–4511. DOI: 10.1167/iovs.13-13818
51. Zhao BW, Fu J, Wang JH, et al. Quality of life in adult intermittent exotropia and the risk factors. *Int J Ophthalmol*. 2021;14(3):442–447. DOI: 10.18240/ijo.2021.03.18
52. Hua L, Zhu H, Li R, et al. Development of a quality of life questionnaire for adults with anisometropic amblyopia. *Zhonghua Yan Ke Za Zhi.* 2021;57(5):341–347. DOI: 10.3760/cma.j.cn112142-20200611-00392
53. Hatt SR, Leske DA, Castañeda YS, et al. Understanding the Impact of Residual Amblyopia on Functional Vision and Eye-related Quality of Life Using the PedEyeQ. *Am J Ophthalmol.* 2020;218:173–181. DOI: 10.1016/j.ajo.2020.05.039
54. Köksoy Vayısoğlu S, Öncü E, Dursun Ö, Dinç E. Investigation of Dry Eye Symptoms in Lecturers by Ocular Surface Disease Index. *Turk J Ophthalmol.* 2019;49(3):142–148. DOI: 10.4274/tjo.galenos.2018.67915
55. Astakhov SY, Tkachenko NV. Trehalose efficacy in dry eye syndrome treatment after phacoemulsification. *Ophthalmology journal*. 2016;9(4):79–89. (In Russ.) DOI: 10.17816/OV20164
56. Kulikov AN, Churashov SV, Kamilova TA, Reituzov VA. Molecular genetic aspects of keratoconus pathogenesis. *Ophthalmology journal*. 2017;10(2):62–71. (In Russ.) DOI: 10.17816/OV10262-71
57. Bilalov EN, Yusupov AF, Nozimov AE, Oripov OI. Estimation of lacrimal dysfunction indices in patients with recurrent pterygium. *Ophthalmology journal* 2020;13(1):11–16. (In Russ.) DOI: 10.17816/OV19242
58. Deswal J, Narang S, Gupta N, et al. To study the impact of diabetic retinopathy on quality of life in Indian diabetic patients. *Indian J Ophthalmol.* 2020;68(5):848–853. DOI: 10.4103/ijo.IJO_1553_19
59. Bian W, Wan J, Smith G, et al. Domains of health-related quality of life in age-related macular degeneration: a qualitative study in the Chinese cultural context. *BMJ Open.* 2018;8(4): e018756. DOI: 10.1136/bmjopen-2017-018756
60. Zhu W, Katinas EB, Solovyov MM, et al. Comparison of results and quality of life in patients with thyroid eye disease after different methods of orbital decompression. *Ophthalmology journal*. 2020;13(3):37–45. (In Russ.) DOI: 10.17816/OV50821
61. Al-Dairi W, Saeed AAA, Al OM. Sowayigh Impact of Quarantine During COVID-19 Pandemic on the Quality of Life of Patients with Allergic Conjunctivitis. *Cureus*. 2020;12(12): e12240. DOI: 10.7759/cureus.12240
62. Azoulay-Sebban L, Zhao Z, Zenouda A, Lombardi M. Correlations Between Subjective Evaluation of Quality of Life, Visual Field Loss, and Performance in Simulated Activities of Daily Living in Glaucoma Patients. *J Glaucoma.* 2020;29(10):970–974. DOI: 10.1097/IJG.0000000000001597
63. Marino PF, Rossi M, Campagna G, et al. Effects of Citicoline, Homotaurine, and Vitamin E on Contrast Sensitivity and Visual-Related Quality of Life in Patients with Primary Open-Angle Glaucoma: A Preliminary Study. *Molecules*. 2020;25(23):5614. DOI: 10.3390/molecules25235614
64. Zolotarev AV, Tselina MEH. Perspektivy kliniko-ehkonomicheskogo analiza v oftal'mologii. *Russian medical journal*. 2011;2(2):78–80. (In Russ.)
65. Saakyan SV, Amiryan AG, Mironova IS. An analysis of long-term quality of life changes in uveal melanoma patients depending on age and treatment type. *Russian Ophthalmological Journal*. 2016;9(1):56–61. (In Russ.) DOI: 10.21516/2072-0076-2016-9-1-56-61
66. Virgili G, Parravano M, Viola F, Varano M. Vision-related quality of life in patients treated for myopic choroidal neovascularization: A post hoc analysis of the OLIMPIC study. *Eur J Ophthalmol*. 2020;30(5):1069–1075. DOI: 10.1177/1120672119853745
67. Kazanova SY, Strakhov VV, Yartsev AV. Glaucoma treatment cost as seen by patients. *Ophthalmology journal*. 2013;6(4):15–20. (In Russ.) DOI: 10.17816/OV2013415-20
68. Bian W, Wan J, Tan M, et al. Predictors of health-related quality of life in Chinese patients receiving treatment for neovascular age-related macular degeneration: a prospective longitudinal study. *BMC Ophthalmol.* 2020;20(1):291. DOI: 10.1186/s12886-020-01561-3
69. Şahl E, Share İdil ŞA. Comparison of Quality of Life Questionnaires in Patients with Low Vision. *Turk J Ophthalmol.* 2021;51(2):83–88. DOI: 10.4274/tjo.galenos.2020.99975
70. Selivanova A, Fenwick E, Man R, et al. Outcomes After Comprehensive Vision Rehabilitation Using Vision-related Quality of Life Questionnaires: Impact of Vision Impairment and National Eye Institute Visual Functioning Questionnaire. *Optom Vis Sci.* 2019;96(2): 87–94. DOI: 10.1097/OPX.0000000000001327
71. Eguchi A, Hasegawa H, Kinouchi H, et al. Reliability and validity of the Japanese version of the Ocular Surface Disease Index for dry eye disease. *BMJ Open.* 2019;9(11): e033940. DOI: 10.1136/bmjopen-2019-033940
72. Ovechkin IG, Malyshev AV, Karapetov GYu, et al. Comparative Evaluation of the Different Assessment Methods of Life Quality in Patients with Vitreoretinal Pathology. *Ophthalmology in Russia*. 2016;13(4):265–272. (In Russ.) DOI: 10.18008/1816-5095-2016-4
73. Xue WW, Zou HD. Rasch analysis of the Chinese Version of the Low Vision Quality of Life Questionnaire. *Zhonghua Yan Ke Za Zhi.* 2019;55(8):582–588. DOI: 10.3760/cma.j.issn.0412-4081.2019.08.007
74. Şahlı E, Aysun Sİ. Comparison of quality of life questionnaires in patients with low vision. *Turk J Ophthalmol.* 2021;51(2):83–88. DOI: 10.4274/tjo.galenos.2020.99975

СПИСОК ЛИТЕРАТУРЫ

1. Новик А.А., Ионова Т.И. Оценка качества жизни больного в медицине // Клиническая медицина. 2002. № 2. С. 10–12.
2. Terheyden J.H., Finger R.P. Vision-related Quality of Life with Low Vision – Assessment and Instruments // Klin Monbl Augenheilkd. 2019. Vol. 236. No. 3. P. 261–268. DOI: 10.1055/a-0838-5810
3. Давыдов С.В. Медицинские аспекты качества жизни у больных гипертонической болезнью // Казанский медицинский журнал. 2001. Т. 82, № 1. С. 35–37.
4. Белобородова Э.И., Алексеева А.С., Ламброва Е.Г., Филиппова Л.П. Психосоматические расстройства у больных с хроническими заболеваниями печени // Сибирский вестник гастроэнтерологии и гепатологии. 2006. № 20. С. 134–137.
5. Сидоренко Б.А., Семенюк О.А., Бугримова М.А., и др. Математическая модель оценки уровня функционирования сердечной мышцы перед проведением коронарного шунтирования // Кубанский научный медицинский вестник. 2015. Т. 154, № 5. С. 109–113. DOI: 10.25207/1608-6228-2015-5-109-113
6. Малышев А.В., Семыкин В.Д., Карапетов Г.Ю., и др. Методы оценки «качества жизни» пациента в офтальмологической практике // Современная оптометрия. 2015. № 7. С. 34–39.
7. Bian W., Wan J., Smith G., et al. Domains of health-related quality of life in age-related macular degeneration: a qualitative study in the Chinese cultural context // BMJ Open. 2018. Vol. 8, No. 4. P. e018756. DOI: 10.1136/bmjopen-2017-018756
8. Assi L., Rosman L., Chamseddine F., et al. Eye health and quality of life: an umbrella review protocol // BMJ Open. 2020. Vol. 10, No. 8. P. e037648. DOI: 10.1136/bmjopen-2020-037648
9. Bian W., Wan J., Tan M., et al. Predictors of health-related quality of life in Chinese patients receiving treatment for neovascular age-related macular degeneration: a prospective longitudinal study // BMC Ophthalmol. 2020. Vol. 20, No. 1. P. 291. DOI: 10.1186/s12886-020-01561-3
10. Эскина Э.Н., Белогурова А.В., Степанова М.А. Клиническая эффективность применения препарата Нутроф Тотал у пациентов с сухой формой возрастной макулярной дегенерации // Российский офтальмологический журнал. 2016. Т. 9, № 2. С. 90–95. DOI: 10.21516/2072-0076-2016-9-2-90-95
11. Ng H., Vermeer K.A., van Meurs J.C., La Heij E.C. Visual Acuity Inadequately Reflects Vision-Related Quality of Life in Patients after Macula-Off Retinal Detachment Surgery // Invest Ophthalmol Vis Sci. 2020. Vol. 61, No. 10. P. 34. DOI: 10.1167/iovs.61.10.34
12. Лоскутов И.А. Результаты наблюдения применения Луцентиса в обычной практике у пациентов с влажной формой возрастной макулярной дегенерации // Офтальмологические ведомости. 2014. Т. 7, № 2. С. 47–57. DOI: 10.17816/OV2014147-57
13. Астахов Ю.С., Шаар Г.Б., Даль Н.Ю. Влияние витрэктомии на состояние сетчатки у пациентов с влажной формой возрастной макулярной дегенерации // Офтальмологические ведомости. 2014. Т. 7, № 4. С. 13–21. DOI: 10.17816/OV2014413-21
14. Журавлева Л.В. Оценка качества жизни больных возрастной макулярной дегенерацией по результатам их лечения препаратом Лютеин форте // Русский медицинский журнал. 2012. Т. 20, № 1. С. 11–14.
15. Малышев А.В., Карапетов Г.Ю. Влияние хирургического лечения эпиретинальных мембран на качество жизни пациентов // Вестник офтальмологии. 2015. Т. 131, № 1. С. 30–35. DOI 10.17116/oftalma2015131130-35
16. Сергиенко А.А., Малышев А.В., Апостолова А.С. Основные закономерности нарушений зрительной системы у пациентов с отслойкой сетчатки в педиатрической и взрослой практике с позиций уровня антиоксидантной защиты // Офтальмология. 2021. Т. 18, № 1. С. 152–156. DOI: 10.18008/1816-5095-2021-1-152-156
17. Аль-Рашид З.Ж., Малышев А.В., Лысенко О.И. Изменения показателей качества жизни при оперативном лечении отслойки сетчатки // Офтальмологические ведомости. 2014. Т. 7, № 2. С. 23–29. DOI: 10.18008/1816-5095-2021-1-152-156
18. Queirós A. Quality of life of myopic subjects with different methods of visual correction using the NEI RQL-42 questionnaire // Eye Contact Lens. 2012. Vol. 38, No. 2. P. 116–121. DOI: 10.1097/ICL.0b013e3182480e97
19. Kirwan C., Lanigan B., O'Keefe M.J. Vision-related quality of life assessment using the NEI-VFQ-25 in adolescents and young adults with a history of congenital cataract // Pediatr Ophthalmol Strabismus. 2012. Vol. 49, No. 1. P. 26–31. DOI: 10.3928/01913913-20110517-02
20. He L., Cui Y., Tang X., et al. Changes in visual function and quality of life in patients with senile cataract following phacoemulsification // Ann Palliat Med. 2020. Vol. 9, No. 6. P. 3802–3809. DOI: 10.21037/apm-20-1709
21. Альчинова А.С., Морина К.Ю., Рахманов В.В., и др. Сравнение зрительных функций и степени удовлетворенности качеством зрения у пациентов после имплантации мультифокальной ИОЛ AcrySof ReSTOR SN6AD1 и различных моделей монофокальных ИОЛ // Офтальмологические ведомости. 2016. Т. 9, № 4. С. 5–12. DOI: 10.17816/OV20164
22. Murdoch I., Smith A.F., Baker H., et al. The cost and quality of life impact of glaucoma in Tanzania: An observational study // PLoS One. 2020. Vol. 15, No. 6. P. e0232796. DOI: 10.1371/journal.pone.0232796
23. Miraftabi A., Coleman A.L., Nilforushan N., et al. Vision-related quality of life in patients with a history of congenital glaucoma // Eur J Ophthalmol. 2020. DOI: 10.1177/1120672120977354
24. Беликова Е.И., Шарова Г.А. Персонализированный подход к лечению пациентов с латентной стадией закрытоугольной глаукомы // Офтальмология. 2020. Т. 17, № 3s. С. 566–571. DOI: 10.18008/1816-5095-2020-3S-566-571
25. Panthier C., Moran S., Bourges J.L. Evaluation of vision-related quality of life in keratoconus patients, and associated impact of keratoconus severity indicators // Graefe's Archive for Clinical and Experimental Ophthalmology. 2020. Vol. 258, No. 7. P. 1459–1468. DOI: 10.1007/s00417-020-04680-1
26. Khabbazi A., Attari E.V., Jafarabadi A.M., Mahdavi M.A. Quality of Life in Patients With Behçet Disease and Its Relation With Clinical Symptoms and Disease Activity // Reumatología Clínica. 2021. Vol. 17, No. 1. P. 1–6. DOI: 10.1016/j.reuma.2019.03.002
27. Steinberg J., Bußmann N., Frings A., et al. Quality of life in stable and progressive 'early-stage' keratoconus patients // Acta Ophthalmol. 2021. Vol. 99, No. 2. P. e196–e201. DOI: 10.1111/aos.14564
28. Кочергин С.А., Сергеева Н.Д. Сравнительный анализ показателей качества жизни и состояния зрения у пациентов с разными типами механической травмы глаза // Офтальмология. 2012. Т. 9, № 3. С. 77–80. DOI: 10.18008/1816-5095-2012-3-77-80
29. Wilson M.R., Sandberg K.A., Foutch B.K. Macular pigment optical density and visual quality of life // J Optom. 2021. Vol. 14, No. 1. P. 92–99. DOI: 10.1016/j.optom.2020.07.008

30. Kishimoto F., Ohtsuki H. Comparison of VF-14 scores among different ophthalmic surgical interventions // Acta Med Okayama. 2012. Vol. 66, No. 2. P. 101–110. DOI: 10.18926/AMO/48260
31. Бойко Э.В., Сысоев В.Н., Новик А.А., Кузьмичева О.В. Качество жизни и психологический статус больных с глаукомой и катарактой // Глаукома. 2010. № 1. С. 21–25.
32. Коротких С.А., Гринев А.Г., Свиридова М.Б., Данилов А.М. Разработка алгоритма выбора метода хирургического лечения у пациентов с катарактой и астероидным гиалозом // Офтальмология. 2020. Т. 17, № 3. С. 361–367. DOI: 10.18008/1816-5095-2020-3-361-367
33. Исакова И.А., Джаши Б.Г., Аксенов В.П. Гендерный признак в удовлетворенности пациентов результатами хирургического лечения катаракты с имплантацией мультифокальной ИОЛ // Вестник Оренбургского государственного университета. 2011. Т. 14, № 133. С. 156–157.
34. McAlinden A., Gothwal V., Khadka J., et al. Head-to-head comparison of 16 cataract surgery outcome questionnaires // Ophthalmology. 2011. Vol. 118, No. 12. P. 2374–2381. DOI: 10.1016/j.ophtha.2011.06.008
35. Lundström M., Pesudovs K.J. Questionnaires for measuring cataract surgery outcomes // Cataract Refract Surg. 2011. Vol. 37, No. 5. P. 945–959. DOI: 10.1016/j.jcrs.2011.03.010
36. Chatziralli I.P., Sergentanis T.N., Peponis V.G., et al. Risk factors for poor vision-related quality of life among cataract patients. Evaluation of baseline data // Graefe's Archive for Clinical and Experimental Ophthalmology. 2013. Vol. 251, No. 3. P. 783–789. DOI: 10.1007/s00417-012-2194-2
37. Fraser M.L. Vision, quality of life and depressive symptoms after first eye cataract surgery // Psychogeriatrics. 2013. Vol. 46, No. 9. P. 16–18. DOI: 10.1111/psyg.12028
38. Azoulay-Sebban L., Zhao Z., Zenouda A., Lombardi M. Correlations Between Subjective Evaluation of Quality of Life, Visual Field Loss, and Performance in Simulated Activities of Daily Living in Glaucoma Patients // J Glaucoma. 2020. Vol. 29, No. 10. P. 970–974. DOI: 10.1097/IJG.0000000000001597
39. Nelson P., Aspinall P., Papasouliotis O. Quality of life in glaucoma and its relationship with visual function // J Glaucoma. 2003. Vol. 12, No. 1. P. 139–150. DOI: 10.1097/00061198-200304000-00009
40. Janz N.K., Wren P.A., Lichter P.R. Quality of life in newly diagnosed glaucoma patients: the Collaborative Initial Glaucoma Treatment Study patterns and correlates over time // Ophthalmology. 2007. Vol. 114, No. 11. P. 2213–2220. DOI: 10.1016/s0161-6420(00)00624-2
41. Tripop S., Pratheepawanit N., Asawaphureekorn S. Health Related Quality of Life Instruments for Glaucoma // J Med Assoc Thai. 2005. Vol. 88, No. 1. P. 26–28.
42. Pesudovs K., Garamendi E., Elliott D.B. The Quality of Life Impact of Refractive Correction (QIRC) questionnaire: development and validation // Optom Vis Sci. 2004. Vol. 8, No. 5. P. 769–777. DOI: 10.1097/00006324-200410000-00009
43. Garamendi E. The Refractive Status and Vision Profile: evaluation of psychometric properties and comparison of Rasch and summated Likert-scaling // Vision Res. 2006. Vol. 46, No. 8–9. P. 1375–1383. DOI: 10.1016/j.visres.2005.07.007
44. Трубилин В.Н., Овечкин И.Г., Пожарицкий М.Д., и др. Исследование качества жизни после эксимерлазерных операций // Современная оптометрия. 2012. № 5. С. 39–43.
45. Овечкин И.Г., Малышев А.В., Карапетов Г.Ю., и др. Методические основы разработки методики оценки качества жизни у пациентов с различными видами витреоретинальной патологии // Офтальмология. 2015. Т. 12, № 4. С. 75–79. DOI: 10.18008/1816-5095-2016-4-265-272
46. Kandel H., Watson S.L. Quality-of-life researchers in ocular allergy may benefit from the newer methods // J Allergy Clin Immunol Pract. 2021. Vol. 9. No. 1. P. 595–596. DOI: 10.1016/j.jaip.2020.09.067
47. Artesani M.C., Esposito M., Sacchetti M., et al. Health-related quality of life in children at the diagnosis of Vernal Keratoconjunctivitis // Pediatr Allergy Immunol. 2021. DOI: 10.1111/pai.13520
48. Проскурина О.В., Тарутта Е.П., Иомдина Е.Н., и др. Актуальная классификация астенопии: клинические формы и стадии // Российский офтальмологический журнал. 2016. Т. 9, № 4. С. 69–73. DOI: 10.21516/2072-0076-2016-9-4-69-73
49. Коротких С.А., Никифорова А.А. Исследование надежности и валидности анкеты количественной оценки астенопических жалоб компьютерного зрительного синдрома // Современная оптометрия. 2017. № 8(108). С. 29–33.
50. González-Pérez M., Susi R., Antona B., et al. The Computer-Vision Symptom Scale (CVSS17): development and initial validation // Invest Ophthalmol Vis Sci. 2014. Vol. 55, No. 7. P. 4504–4511. DOI: 10.1167/iovs.13-13818
51. Zhao B.W., Fu J., Wang J.H., et al. Quality of life in adult intermittent exotropia and the risk factors // Int J Ophthalmol. 2021. Vol. 14, No. 3. P. 442–447. DOI: 10.18240/ijo.2021.03.18
52. Hua L., Zhu H., Li R., et al. Development of a quality of life questionnaire for adults with anisometropic amblyopia // Zhonghua Yan Ke Za Zhi. 2021. Vol. 57, No. 5. P. 341–347. DOI: 10.3760/cma.j.cn112142-20200611-00392
53. Hatt S.R., Leske D.A., Castañeda Y.S., et al. Understanding the Impact of Residual Amblyopia on Functional Vision and Eye-related Quality of Life Using the PedEyeQ // Am J Ophthalmol. 2020. Vol. 218. P. 173–181. DOI: 10.1016/j.ajo.2020.05.039
54. Köksoy V.S., Öncü E., Dursun Ö., Dinç E. Investigation of Dry Eye Symptoms in Lecturers by Ocular Surface Disease Index // Turk J Ophthalmol. 2019. Vol. 49, No. 3. P. 142–148. DOI: 10.4274/tjo.galenos.2018.67915
55. Астахов С.Ю., Ткаченко Н.В. Эффективность трегалозы в лечении синдрома «сухого глаза» после факоэмульсификации // Офтальмологические ведомости. 2016. Т. 9, № 4. С. 79–89. DOI: 10.17816/OV20164
56. Куликов А.Н., Чурашов С.В., Камилова Т.А., Рейтузов В.А. Молекулярно-генетические аспекты патогенеза кератоконуса // Офтальмологические ведомости. 2017. Т. 10, № 2. С. 62–71. DOI: 10.17816/OV10262-71
57. Билалов Э.Н., Юсупов А.Ф., Нозимов А.Э., Орипов О.И. Оценка показателей слёзной дисфункции у пациентов с рецидивирующим птеригиумом // Офтальмологические ведомости. 2020. Т. 13, № 1. С. 11–16. DOI: 10.17816/OV19242
58. Deswal J., Narang S., Gupta N., et al. To study the impact of diabetic retinopathy on quality of life in Indian diabetic patients // Indian J Ophthalmol. 2020. Vol. 68. No. 5. P. 848–853. DOI: 10.4103/ijo.IJO_1553_19
59. Bian W., Wan J., Smith G., et al. Domains of health-related quality of life in age-related macular degeneration: a qualitative study in the Chinese cultural context // BMJ Open. 2018. Vol. 8, No. 4. P. e018756. DOI: 10.1136/bmjopen-2017-018756
60. Чжу В., Катинас Е.Б., Соловьев М.М., и др. Сравнение результатов и качества жизни пациентов с эндокринной офтальмопатией после различных методов декомпрессии орбиты // Офтальмологические ведомости. 2020. Т. 13, № 3. С. 37–45. DOI: 10.17816/OV50821

61. Al-Dairi W., Saeed A.A.A., Al O.M. Sowayigh Impact of Quarantine During COVID-19 Pandemic on the Quality of Life of Patients with Allergic Conjunctivitis // Cureus. 2020. Vol. 12, No. 12. P. e12240. DOI: 10.7759/cureus.12240
62. Azoulay-Sebban L., Zhao Z., Zenouda A., Lombardi M. Correlations Between Subjective Evaluation of Quality of Life, Visual Field Loss, and Performance in Simulated Activities of Daily Living in Glaucoma Patients // J Glaucoma. 2020. Vol. 29, No. 10. P. 970–974. DOI: 10.1097/IJG.0000000000001597
63. Marino P.F., Rossi M., Campagna G., et al. Effects of Citicoline, Homotaurine, and Vitamin E on Contrast Sensitivity and Visual-Related Quality of Life in Patients with Primary Open-Angle Glaucoma: A Preliminary Study // Molecules. 2020. Vol. 25, No. 23. P. 5614. DOI: 10.3390/molecules25235614
64. Золотарёв А.В., Целина М.Э. Перспективы клинико-экономического анализа в офтальмологии // Русский медицинский журнал. 2011. Т. 2, № 2. С. 78–80.
65. Саакян С.В., Амирян А.Г., Миронова И.С. Анализ показателей качества жизни больных увеальной меланомой в отдалённом периоде в зависимости от возраста и лечения // Российский офтальмологический журнал. 2016. Т. 9, № 1. С. 56–61. DOI: 10.21516/2072-0076-2016-9-1-56-61
66. Virgili G., Parravano M., Viola F., Varano M. Vision-related quality of life in patients treated for myopic choroidal neovascularization: A post hoc analysis of the OLIMPIC study // Eur J Ophthalmol. 2020. Vol. 30, No. 5. P. 1069–1075. DOI: 10.1177/1120672119853745
67. Казанова С.Ю., Страхов В.В., Ярцев А.В. Цена лечения глаукомы глазами пациентов // Офтальмологические ведомости. 2013. Т. 6, № 4. С. 15–20. DOI: 10.17816/OV2013415-20
68. Bian W., Wan J., Tan M., et al. Predictors of health-related quality of life in Chinese patients receiving treatment for neovascular age-related macular degeneration: a prospective longitudinal study // BMC Ophthalmol. 2020. Vol. 20, No. 1. P. 291. DOI: 10.1186/s12886-020-01561-3
69. Şahl E., Share İdil Ş.A. Comparison of Quality of Life Questionnaires in Patients with Low Vision // Turk J Ophthalmol. 2021. Vol. 51, No. 2. P. 83–88. DOI: 10.4274/tjo.galenos.2020.99975
70. Selivanova A., Fenwick E., Man R., et al. Outcomes After Comprehensive Vision Rehabilitation Using Vision-related Quality of Life Questionnaires: Impact of Vision Impairment and National Eye Institute Visual Functioning Questionnaire // Optom Vis Sci. 2019. Vol. 96, No. 2. P. 87–94. DOI: 10.1097/OPX.0000000000001327
71. Eguchi A., Hasegawa H., Kinouchi H., et al. Reliability and validity of the Japanese version of the Ocular Surface Disease Index for dry eye disease // BMJ Open. 2019. Vol. 9, No. 11. P. e033940. DOI: 10.1136/bmjopen-2019-033940
72. Овечкин И.Г., Малышев А.В., Карапетов Г.Ю., и др. Сравнительная оценка эффективности различных методик оценки качества жизни у пациентов с витреоретинальной патологией // Офтальмология. 2016. Т. 13, № 4. С. 265–272. DOI: 10.18008/1816-5095-2016-4
73. Xue W.W., Zou H.D. Rasch analysis of the Chinese Version of the Low Vision Quality of Life Questionnaire // Zhonghua Yan Ke Za Zhi. 2019. Vol. 55, No. 8. P. 582–588. DOI: 10.3760/cma.j.issn.0412-4081.2019.08.007.
74. Şahlı E., Aysun S.İ. Comparison of quality of life questionnaires in patients with low vision // Turk J Ophthalmol. 2021. Vol. 51, No. 2. P. 83–88. DOI: 10.4274/tjo.galenos.2020.99975

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