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Original Research

Factors associated with vision-related quality of life among the adult population living in Nagorno Karabagh

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ABSTRACT

Objectives: Visual impairment and blindness are major public health problems causing significant suffering, disability, loss of productivity, and diminishing quality of life for millions of people. This study explored the factors associated with the overall vision-related quality of life (VRQoL) and its different domains in the adult population of Nagorno Karabakh and assessed the independent contribution of specific eye diseases to VRQoL.

Study design: A cross-sectional study.

Methods: We conducted interviewer-administered survey along with free eye screenings among adult residents of Hadrut and Martuni regions of Nagorno Karabakh (Artsakh) in 2014–2015. The study questionnaire included questions about sociodemographic characteristics, non-communicable diseases, use of eye care services, visual acuity, eye diseases, and VRQoL. National Eye Institute Visual Functioning Questionnaire-25 (NEI VFQ-25) was used to assess VRQoL. In total, 531 adults participated in the study.

Results: The mean age of participants was 60.1 years (standard deviation [SD] = 13.7), ranging from 18 to 90 years. The majority of participants were female (71.4%). The most frequently diagnosed eye disorder was cataract (33.8%). The prevalence of moderate and severe visual impairment was 7.0% and 0.8%, respectively. Almost 2.8% (15) of participants were blind. The mean global score of VFQ-25 in all study participants was 71.1 ± 19.28 (SD), whereas the mean global scores of VFQ-25 among not visually impaired, visually impaired, and blind participants were 74.0 ± 16.47 (SD), 51.7 ± 21.77 (SD), and 30.9 ± 20.2 (SD), respectively. In the adjusted linear regression model having moderate/severe visual impairment or blindness, age, socio-economic status, and having eye diseases such as glaucoma and cataract were significantly associated with VFQ-25 global score. The subscales of near vision, distance vision, peripheral vision, role difficulties, and mental health had significant associations with severe/moderate visual impairment in the adjusted

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analysis. After adjusting for visual impairment and demographic variables, participants with cataract and glaucoma were found to have statistically significant lower subscale scores than those without eye disease.

Conclusion: Our data suggest that visual impairment was associated with lower scores of VRQoL. The strength of that association correlated with the increase in the level of visual impairment (from moderate/severe impairment to blindness). VRQoL was also shown to be affected by age, socio-economic status, and having eye diseases such as glaucoma and cataract. Further actions of remediation of visual impairment in this population are warranted.

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Introduction

Visual impairment and blindness are major public health problems causing significant suffering, disability, loss of productivity, and diminishing quality of life (QoL) for millions of people.¹ The World Health Organization (WHO) defines visual impairment as visual acuity worse than 20/70 (moderate [$<20/70 \geq 20/200$] and severe [$<20/200 \geq 20/400$] visual impairment) but equal to or better than 20/400 (legal blindness) in the better eye, even with corrective lenses.² There were about 191 million visually impaired people around the world in 2010.³ Vision disability is one of the top 10 disabilities among adults 18 years and older worldwide.¹ The leading causes of age-related visual impairment include cataract,^{4,5} glaucoma,^{4,6} age-related macular degeneration (AMD),^{5,7} diabetic retinopathy (DR),^{5,8} and uncorrected refractive errors.^{5,9}

Several studies examined the association between visual impairment and vision-related quality of life (VRQoL) during the past two decades.^{7,10,11} Although visual functioning is most commonly measured in terms of visual acuity, visual acuity test alone is unable to capture impaired binocular performance, reading, and driving, all which constitute overall visual functioning.⁵ Multidimensional self-reported measures of vision-specific health-related quality of life (HRQoL) have been devised in the last several decades to provide a comprehensive overview of the experiences of visually impaired people.⁵

Visual impairment has been shown to be associated with self-reported difficulties in physical performance,^{12,13} activities of daily living,^{14,15} low socialization,^{16,17} and emotional distress.¹⁶ Visual impairment might lead to depression, frustration, and anxiety, not only because of the loss of the physical function but also due to the associated worry about possible deterioration of the condition, the anticipated pain of treatment, and the difficult adaptation to activity limitations.^{11,18–20} Cognitive impairment and dementia have also been highlighted as possible consequences of vision loss in older adults.^{21,22}

The assessments of the QoL in visually impaired are of clinical importance.¹¹ Even when the improvement of visual function in these patients is not possible, such assessments might provide important information in determining disability associated with visual impairment²³ and help to develop targeted interventions that could improve their QoL.¹¹

The primary aim of the present study was to explore the factors associated with the overall VRQoL and its different domains in the adult population of Hadrut and Martuni regions of Nagorno Karabakh. The secondary aim of the study was to assess the independent contribution of specific eye diseases to VRQoL.

Visual impairment in Nagorno Karabagh

Nagorno Karabagh (Artsakh) is a mountainous region located in the northeastern part of the Armenian highlands. It has seven administrative provinces: Shahumyan, Kashatagh, Martakert, Askeran, Shushi, Martuni, and Hadrut, with the capital city of Stepanakert.²⁴ Nagorno Karabagh is an ethnic Armenian territory. Stalin annexed Artsakh to Azerbaijan in 1923 where it existed as a semiautonomous region for several decades. In 1988 it declared itself independent, which led to a military conflict with Azerbaijan.^{25,26} The dissolution of the Soviet Union and Armenia's active support of Artsakh's independence movement escalated the conflict. The cease-fire was enacted in 1994; however, a permanent peace has not been negotiated and the conflict has been 'frozen'.²⁵

The absence of international recognition of Artsakh limited international communications, trade, and foreign assistance that other less developed countries and areas affected by military conflict typically receive^{25,26} and created challenges for the government in meeting population's health and human services needs.^{25,27} The eye health of this population is of particular concern because of the limited number of ophthalmological offices and qualified ophthalmologists serving Artsakh population. According to the Ministry of Health in Artsakh, there was one ophthalmologist located in the city of Martuni and seven ophthalmologists in the capital city of Stepanakert in 2015, serving the entire republic.²⁸ Information on the prevalence of visual impairment in this population and the QoL among those who are visually impaired are virtually non-existent.

Methods

Settings, population, and data collection

The researchers conducted a cross-sectional interviewer-administered survey along with free eye screenings among

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