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Evaluation of the Causes Of Blindness In Patients Admitted to the Health Board Of A Hospital Servicing Souteastern Anatolia

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Abstract

Objective: We aimed to reveal the causes of blindness in patients who applied to a health board of our hospital which provides service to a socioeconomically depressed region.

Methods: We retrospectively reviewed the records of 314 patients who were blind in at least one eye were recorded among 2214 patients who were referred to our hospital's health board between February 2016 and January 2018 for evaluation by the health board to receive a disability report from our hospital.

Results: In this study, we determined that 185 (58.9%) patients were female, 129 (41.1%) patients were male and the mean patient age was 70.84 ± 19.15 years. The most common causes of blindness were cataract seen in 104 (33.1%) patients, phthisis eyes in 53 (16.9%) patients, optic atrophy in 40 (12.7%) patients, corneal opacities in 35 (11.1%) patients and diabetic retinopathy in 20 (6.4%) patients.

Conclusions: Both in our study and in other studies conducted in our region, preventable blindness such as cataract, phthisis and corneal opacity have been detected at high rates. Therefore we believe that more awareness and effort may be needed to reduce such preventable blindness in our region.

Keywords*:* Blindness, Cataract, Phthisis.

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Güneydoğu Anadolu Bölgesine Hızmet Sunan Bir Hastanenin Sağlık Kuruluna Başvuran Hastalarda Körlük Sebeplerinin Değerlendirilmesi

Öz

Amaç: Sosyoekonomik olarak düşük seviyede olan bir bölgeye hizmet veren hastanemizin sağlık kuruluna başvuran hastalarda körlük sebeplerini ortaya koymayı amaçladık.

Yöntemler: Şubat 2016 ile Ocak 2018 tarihleri arasında hastanemizden engelli raporu almak için sağlık kuruluna başvurmuş ve sağlık kurulu tarafından değerlendirilmiş olan 2214 hasta arasından en az bir gözünde körlük düzeyinde görme kaybı olan 314 hastanın kayıtları retrospektif olarak incelendi.

Bulgular: Bu çalışmamızda Sağlık kurulunda rapor düzenlenen ağır görme kaybı olan hastaların 185 (%58,9) 'inin kadın, 129 (%41,1) 'unun ise erkek olduğu ve yaş ortalamasının 70.84±19.15 yıl olduğu saptandı. En sık rastlanan ilk beş görme kaybı nedenleri olarak; 104 (%33,1) hastada katarakt, 53 (%16,9) hastada evissere/ ftizik göz, 40 (%12,7) hastada optik atrofi, 35 (%11,1) hastada korneal opasite ve 20 (%6,4) hastada diyabetik retinopati görüldü.

Sonuç: Hem çalışmamızda hem de bölgemizde yapılan diğer çalışmalarda, katarakt, fitizis bulbi ve korneal opasiteler gibi önlenebilir körlükler yüksek oranda tespit edilmiştir. Bu nedenle, bölgemizdeki bu önlenebilir körlükleri azaltmak için daha fazla farkındalık ve çaba gerektiğine inanıyoruz.

Anahtar Kelimeler: Körlük, Katarakt, Fitizis.

INTRODUCTION

Visual impairment is recognised as a very important public health problem worldwide[1]. Reduced vision is a serious public health issue, since 161 million individuals in the world are estimated to have reduced vision, of whom approximately 37 million are blind[2]. The World Health Organization proposed 'Vision 2020: The Right to Sight', which has contributed to a reduction in the global number of cases of blindness[3].

The Report of the Board of Health of the Disabled is a document that describes the disability and health situation, the social rights that can be exercised by persons with disabilities and the places where they cannot be employed. In our country's legislation, persons with disabilities are defined as those who have lost their physical, mental, spiritual, sensual and social skills at various levels, innately or later for any reason, as well as those who need protection, care, rehabilitation, counselling and support services for their daily needs to adapt to social life[4].

Disability at an early age is usually the result of congenital conditions and accidents, while it is frequently seen in chronic diseases later in life[5]. One of the most important developments recorded in the last century is the expected increase in life expectancy. Life expectancy in the developed countries in the 20th century has exceeded 75 years, up from an average of 47 years[6].

According to the World Health Organization (WHO) World Disability Report 2011, more than 1 billion people, or approximately 15% of the world's population (according to 2010 world population estimates), live with some kind of disability. While the Global Health Study estimates that 110 million (2.2%) of these people have had serious difficulties in fulfilling their functions, the Global Burden of Disease study estimated the number of people living with severe disability (such as quadriplegia, severe depression or blindness) at 190 million (3.8%)[7].

In our country according to the Turkey Disability Survey conducted in 2002, the proportion of the total population represented

by people with disabilities was determined as 12.29%. The mean blindness rate in this study was 0.48%. The mean blindness rate in women was 0.58%, while in women it was 0.38%.as females[8]. Reports of the Disabled Health Board are given according to the provisions of the 'Regulation on the Reports of the Health Board to be given to the Disability Criterion, Classification and Disability' issued in 2013. According to this regulation, the Disability Health Board consists of specialists in internal diseases, eye diseases, ear-nose-throat, general surgery or orthopaedics, neurology or mental health and illnesses. If rehabilitation specialists are available, they must serve on the committee. According to the laws on which this regulation is based, persons with disabilities need to receive a Report of the Disabled Health Board in order to benefit from the rights and opportunities provided to them[9].

World Health Organization (WHO) has defined International Classification of Functioning. In addition, the Balthazar formula is used when identifying a total disability level of an individual[10].

In this study, we aimed to reveal the causes of blindness and the demographic characteristics of patients with blindness receiving disability reports from our hospital, which provides service to a socioeconomically depressed region relative to the rest of the country.

METHODS

In this study, From February 2016 to 2018 January, the records of 2214 patients files who applied to our hospital to receive a disability report and were evaluated by the health board were retrospectively evaluated. The approval for the research was granted by the Institutional Ethics Committee (Gazi Yasargil Training and Research Hospital Ethics Committee, decision no: 2018/159). The information recorded in the patients' hospital information system and the health board reports were examined.

Patients' age, gender, best corrected visual acuity (BCVA), records of anterior and posterior segment examinations and eye disease disability rate were recorded. In addition, the best corrected visual acuity of the patients was classified as low vision (20/400 ≤ BCVA <20/60) and blindness (BCVA <20/400) according to the WHO criteria.

In this study, patient files were examined retrospectively. therefore, no consent was obtained. And this study was approved by local ethics committee.

The data obtained were recorded in the Statistical Package for the Social Sciences (SPSS) 22 program, and descriptive statistical evaluation was performed in terms of variable groupings and correlations.

Table 1: Demographic data of the patients.

Characteristics	
Age (Years)	
• Female	74.86±15.09
• Male	65.08±22.63
Gender	
• Female	185 (58.9%)
• Male	129 (41.1%)
Total (n)	**314**

RESULTS

The medical files of 2214 patients were included in this study. A total of 343 eyes of 314 patients who were blind in at least one eye were recorded. In total, 185 (58.9%) females and 129 (41.1%) males were included in the study. The mean age of these patients was 70.84 ± 19.15 (18–104) years. The mean age of female patients was 74.86 ± 15.09, while the mean age of males was 65.08 ± 22.63. According to these results, the average age was significantly higher in females. ($p< 0.05$) (Table1) The mean visual system impairment

rating was 54.054 ± 21.65 (32–90). However, this rate was significantly higher in males (58.90 ± 24.26) than in females (50.66 ± 18.97), and this difference was considered statistically significant. ($p< 0.05$)

The five most common visual impairments were caused by cataract, seen in 104 (33.1%) patients, phthisis in 53 (16.9%) patients, optic atrophy in 40 (12.7%) patients, corneal opacities in 35 (11.1%) patients and diabetic retinopathy in 20 (6.4%) patients. (Table2)

Table 2: Disturbition of disorders.

Disorder	Frequency (n)	Percent (%)
Cataract	104	33.1
Phthisis	53	16.9
Optical atrophy	40	12.7
Corneal opacity	35	11.1
Diabetic retinopathy	20	6.4
Maculopathy	16	5.1
Degenerative myopia	11	3.5
Amblyopia	10	3.2
Others	25	8.0
Total	314	100.0

The most common causes of blindness in males were cataract (38.4%), phthisis (15.7%) and corneal opacity (9.7%), while the most common causes of blindness in females were seen as cataract (25.6%), phthisis (18.6%) and optic atrophy (17.8%) (Table3).

Twenty nine patients had blindness in the other eye. As the causes of blindness in the other eyes of patients; Cataract in 11 (38.0%) patients, corneal opacity in 5 (17.3%) patients, optical atrophy in 4 (13.8%) patients, phthisis in 3 (10.3%) patients, diabetic retinopathy in 3 (10.3%) patients and maculopathy in 3 (10.3%) patients were detected.

Table 3: The causes of blindness in patients.

Causes Of Blindness	Gender	
	Female n (%)	Male n (%)
Cataract	71 (38.4)	33 (25.6)
Phythisis	29 (15.7)	24 (18.6)
Corneal Opacity	18 (9.7)	17 (13.2)
Optic atrophy	17 (9.2)	23 (17.8)
Degenerative myopia	9 (4.8)	2 (1.6)
Maculopathy	10 (5.4)	6 (4.7)
Diabetic retinopathy	17 (9.2)	3 (2.3)
Amblyopia	2 (1.1)	8 (6.2)
Others	12 (6.5)	13 (10.0)
Total (n)	185	129

DISCUSSION

In our study, the most common causes of blindness were detected as cataract, phthisis bulbi, optic atrophy, corneal opacity and diabetic retinopathy respectively.

A meta-analysis of 24 population-based studies in the Far East reported blindness and low vision rates among elderly adults over 50 years of age of 1.7% and 4.1%, respectively[11]. Furthermore, in different studies conducted here, the prevalence of blindness and low vision was estimated as 0.7–2.88 and 1.7–7.75, respectively[12,13]. The prevalence of blindness and visual impairment is higher in women and older, illiterate people[14]. In another study, the prevalence of visual impairment in urban and rural areas was 1.40% and 2.22%, respectively[15].

The WHO reported that the main cause of blindness was cataract (51%). Other causes included glaucoma, AMD, childhood blindness, corneal opacities, uncorrected refraction defects, trauma and diabetic retinopathy[16].

In a previous study, the causes of blindness around our region were reported as cataract (50.0%), corneal diseases (15.0%), glaucoma

(12.0%), phthisis bulbi (6.0%) and optic atrophy (6.0%), while the causes of low vision were reported as cataract (52.0%), refractive errors (26.0%) and corneal diseases (6.5%)[17]. The previous study had demographic characteristics in common with ours. In contrast, in our study, cataract, phthisis, optic atrophy, corneal opacity and diabetic retinopathy were the most frequent causes of blindness and vision loss. These different outcomes are due to differences in study design, because cataract patients were excluded from the previous study; however, in our study, in agreement with the previous study, the other most common causes of vision loss were phthisis, optic nerve diseases and corneal diseases[18]. Yet another study conducted in our country on a sample with different demographic features and in a relatively socioeconomically more developed region described age-related macular degeneration, Stargart's disease and myopic degeneration as the most common causes of visual impairment[19].

In another study conducted in the eastern part of our country, cataract (23.7%), AMD (15.2%), amblyopia (11.6%), degenerative myopia (8.1%) and glaucoma (8.1%) were the most common causes of blindness[20]. In our study, cataract, corneal opacity and phthisis were detected at high rates in people with blindness. This may be due to the lesser degree of socio-cultural development in the region. In addition, the high frequency of corneal pathologies and phthisis can be explained by the incidence of high-trauma cases. In some studies it was determined that the most common cause of bilateral blindness was glaucoma (60.0%) and cataracts[21,22]. Similarly, we have detected cataract, optic atrophy and phthisis as the most common causes of bilateral blindness. In a study conducted in northern Europe, the causes of unilateral blindness were reported as AMD (57.0%), glaucoma (14.0%) and degenerative myopia (14.0%), while in individuals under 65, the causes were optic nerve diseases (29.0%), retinitis pigmentosa (29.0%) and glaucoma (14.0%)[23]. Uncorrected refractive defect is the leading cause of visual impairment in the different regions of the world[24,25]. Another study provides evidence that visual disturbance and blindness are related not only to older age as expected, but also to female gender and the socioeconomic levels of sampled areas[26]. The high incidence of corneal opacity and phthisis bulbi in our study is attributed to the high frequency of ophthalmologic trauma and low access to health services.

In recent years, all socioeconomic groups have received increased access to health services in our country, but health consciousness in our region may be underdeveloped, as indicated by the high incidence of cataracts that can be corrected by surgical treatment and traumatic causes of blindness such as phthisis bulbi and corneal opacities[27].

Although significant improvements have been observed recently in health services in our country, the causes of preventable blindness such as cataract, corneal opacity and phytosis are still high in rural areas. These results suggest that there are still problems that need to be overcome both in the use of health services and in delivering these services to patients. Therefore, in order to reduce preventable blindness, health service server authorities need to make more efforts to reach more people and to raise awareness of the society.

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