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Research Article

Disabling Cataract in Swat; How Big is the Problem?

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Abstract

Background: Visual impairment caused by cataract is a major cause of treatable blindness. Vision 2021: the Right to Sight, a global initiative launched by a coalition of non-government organization and the World health Organization (WHO), is to eliminate avoidable visual impairment and blindness on a global scale. In order to accomplish this goal it is important to know the prevalence of disabling cataract in community, especially in developing countries.

Objective: To estimate the prevalence of disabling cataract in Swat who need surgery.

Settings: Conducted at free eye camps in seven Tehsils of Swat, KPK.

Duration: 4 months from September 2018 to January 2019.

Materials and Methods: It was a descriptive study using convenient sampling method for sample collection. The selection criteria was patients having cataract of any age and of any gender. The exclusion criteria was no perception of light in the eye, mental retardation, psychiatric illness and physically handicap or too young patients unable to undergo slit lamp examination. Retro illumination technique was adopted on the slit lamp to detect presence and type of cataract according to Lens Opacity Classification System III (LOCS III). Demographic data and ocular examination were recorded on a proforma and was analyzed using SPSS version 22.

Results: The disabling cataract was estimated to be 17.5% in patients with a mean age of 62.28 ± 9.10 years. The most common type of cataract was found to be nuclear followed by posterior sub capsular. Bilateral cataract was found in 31.3% of the females.

Conclusion: The prevalence of disabling cataract in swat region is high leading to high rate of reversible blindness in the region. Specific measures should be taken by the health authorities to address the problem.

Keywords: Cataract; Swat; Blindness

Introduction

An opacification in the clear crystalline lens of the eye is called cataract which is a derivative of Latin word “Cataracta” (waterfall) [1]. The etiology of cataract development are multiple. Its mostly age related followed by systemic and ocular diseases with drugs also contributing in its formation [2]. Smoking, alcohol consumption and other deficiencies like low level of antioxidants (vitamin C, vitamin E and carotenoids) are observed to be a contributing factor

in the development of cataract [2,3]. It is among the leading cause of visual impairment both in the developed and the third world accounting for 51% of the blindness [4]. The reported prevalence of cataract of India in urban population is 32% and 25% in the rural [5]. Similarly in Kenya, it is reported that annually 45.0 per 1000 person suffer from visually significant cataract [6].

Disabling cataract is a physical condition that limits the movements, senses, or activities of a person who has visual acuity less than 6/18 with best correction and is devoid of any other ocular pathology. Poor visual functions leads to many adverse outcomes including limitations in mobility, performing daily activities, physical function and poor quality in life. It is estimated that every year 16 million people are diagnosed of having visually disabling cataract globally and with the increase in life expectancy the overall prevalence of visual loss is also increasing [5].

District swat is located in the malakand division of Khyber Pakhtunkhwa (KPK) province of Pakistan in the north west of the country. Due to the china Pakistan economic corridor a lot of economic growth has occurred in the region and no updated information exists on a national level regarding prevalence of disabling cataract in the region. Cataract being a multi factorial disease is estimated in a specific population hence the prevalence in different areas is different. Epidemiological studies on the current condition in the population of Swat are therefore greatly needed. To meet this need, we conducted a study to estimate the prevalence of disabling cataract in the population of Swat, KPK Pakistan to determine the magnitude of the problem to help in development of a guideline for its treatment.

Materials and Methods

It was a descriptive study conducted at free eye camps in all seven Tehsils of Swat KPK namely Babuzai, Matta, Khwaza Khela, Barikot, Kabal, Charbagh and Bahrain during a period of 4 months from September 2018 to January 2019. Sample size was calculated using an online software calculator net: available at: www.calculator.net/sample-size-calculator.html. A verbal informed consent was taken from all the patients before the commencement of the study and outlines made by declaration of Helsinki were followed. Convenient sampling method was used for sample collection and patients fulfilling the inclusion and exclusion criteria were included in the study. The selection criteria was patients having cataract of any age and of any gender. The exclusion criteria was no perception of light in the eye, mental retardation, psychiatric illness and physically handicap or too young patients unable to undergo slit lamp examination. Anterior segment examination was done on the slit lamp and whenever possible examination of the posterior segment examination was done with the help of direct ophthalmoscope. Using the retro illumination technique on the slit lamp, the presence and type of cataract was noted after dilation of the pupils according to Lens Opacity Classification System III (LOCS III). Demographic data and ocular examination were recorded on a proforma and was analyzed using SPSS version 22. Categorical data was presented in frequencies and percentage whereas the data in the form of scale was represented as mean and standard deviation.

Results

During the study, a total of 3978 patients with age 45 to 72 years were screened which consisted of 67.99% females and 32.01% males. Among these screened patients those fulfilling the inclusion and exclusion criteria and were diagnosed as having disabling cataract were included in the study.

We found 698 (17.54%) patients with a mean age of 62.28 ± 9.10 years suffered from disabling cataract consisting of 51.57% females and 48.42% males (male to female ratio, 1 vs 1.17).

In the study the most common morphological type of cataract was found to be nuclear (46.3%) followed by posterior sub capsular (Psc) (Table 1). Gender distribution of cataract revealed that the in males posterior subcapsular cataract was the most common (22.2%) followed by nuclear cataract(16.1%) whereas in females nuclear cataract was the most common (30.2%) (Table 1). Bilateral cataract was found in 31.3% females vs 19.7% males (Table 1).

Type	Males	Females
Nuclear	16.1%	30.2%
Posterior subcapsular	22.2%	12.7%
Cortical	10%	8.6%
Unilateral	15.2%	15.6%
Bilateral	19.7%	31.3%

Table 1: Gender distribution of cataract (n = 698).

The presenting visual acuity of the patients was 6/ 24 to 6/60 in most of the cases while a few presented with visual acuity of hand movement and light perception only (Figure 1).

Figure 1: Visual acuity of patients with disabling cataract (n = 698).

Discussion

About 39 million people in the world are blind and 80% of these suffer from preventable blindness [2]. The leading preventable cause of blindness is cataract and advancing age remains its number one cause. The growing rate of the elderly population in the world has challenged the health system around the globe in planning preventive strategies and implementing them to tackle the problem of blindness due to cataract effectively. In its book on 'Strategies for the prevention of blindness in national programs the WHO has identified national programs based on a primary health care approach as the best strategy for reaching the many people who can benefit from simple, inexpensive and effective measures delivered by trained health workers [7]. There are no established, routine screening programs or public awareness campaigns conducted by the health system at community levels to address cataract.

We found prevalence of cataract in 17.54% of the population aging above 40 years. In comparison to this an earlier study reported 7.5% prevalence in Azad Kashmir [2] but another study reported it as 20.9% in Karachi [8]. Similarly in another study conducted in Taxila cataract prevalence was reported as 20% [9]. These variations in reported prevalence is attributed to different climates, regions, etiology and any other morbidity present in the targeted population.

Aging alone is a risk factor of cataract which is accepted and documented well in literature. The more the age, more chances of developing cataract. We found the average of age of having cataract as 62.28 ± 9.10 years. In a previous study the average age of 63.20 ± 9.5 years was documented [2]. The Beaver Dam Eye Study (BDES) stated that cataract prevalence increased with age and patients older than 75 years have visually significant ca[t]aract [10]. Some researchers [8] reported that people in between the age of 40 - 83 years and of male gender are most likely to develop age cataract but in our study we found more women suffering from cataract as compared to men. Our finding is although in accordance to a population based study conducted in Iran [11] which also mentioned cataract prevalence more in women but is contrary to Vashist P., *et al*. [12] who found no gender difference in his study. Some researchers [13] have suggested that females are less outspoken about their health or neglect it therefore 'suffer in silence' leading to high prevalence of cataract in females. Other have reasons hypothesized by researchers is that females have high life expectancy which renders them to develop cataract [14].

To avoid in discrepancy we used the widely accepted Lens Opacity Classification System III (LOCS III) to classify cataracts during our study and found nuclear cataract as the most common type. It was endorsed a previous study conducted in Azad Kashmir [2]. Vashist P., *et al*. [12] also reported the same in his study but Naseer [8] reported posterior sub capsular cataracts as being the most common type. This variance of frequencies may be attributed to the fact that all of the studies targeted different populations and locations. This variance has been previously reported by Sasaki H., *et al.* [15] who found cortical cataract prevalent in north of China and nuclear cataract in the south.

We found posterior subcapsular cataract more in males whereas in females nuclear cataract was common but in another study no difference was seen among the genders [2,8]. But the most sticking finding in our study was presence of Bilateral cataract in 31.3% females vs 19.7% males. Previous studies [8,10-12] did report bilateral eye involvement with cataract in their studies but the difference is that we found disabling cataract. The only explainable reason of such high incidence is poverty and lack of education because an *i*nverse association has been documented between them reason being low cataract surgery levels [16].

Our study, although first of its kind, is not without limitations. The quality of collected data is not up to the mark missing the educational status of the participants, presence of any co morbidity and the etiology of cataract. Furthermore it is not a true represented of the whole swat region and cannot precisely measure the burden of the disease. Despite of these short comings, to best of our knowledge, the incidence data regarding disabling cataract in swat region is not available and our study may serve as a pilot study for future population based studies and an insights to the burden of vision loss burden in Swat, KPK, Pakistan.

Conclusion

The prevalence of disabling cataract in Swat region is high leading to high rate of reversible blindness in the region. Specific measures should be taken by the health authorities to address the problem.

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