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Pattern of Eye Diseases in Ophthalmic Outpatient Clinic of Al-Zahraa University Hospital: An Observational Descriptive Study

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ABSTRACT

Background: A study of the pattern of the eye diseases is very essential because while some eye conditions are only causing of ocular morbidity, others invariably lead to blindness. However, some conditions are curable, others are largely preventable. **Objective:** The aim of this study was to determine the pattern of different eye diseases among patients attending the Ophthalmic Outpatient Clinic of Al-Zahraa University Hospital.

Subjects and methods: This study was carried out on 500 patients recruited from the Outpatient Clinic of the Ophthalmology Department, AL-Zahraa University Hospital. The study was performed from December 2018 to August 2019. All participants were subjected to fulfilling a pre designed questionnaire including questions about demographic data, a detailed ophthalmological history and a complete Ophthalmological Examination.

Results: Retinal diseases (20.2%) were the most common eye diseases among the studied group followed by errors of refraction (19.6%), cataract (19.4%), dry eye (12.8%) and intravitreal injection (6.4%). There was a significant difference between male and female population regarding ocular trauma and different eye diseases. Also, there was a significant difference between occupation groups regarding diagnosis of different eye diseases and between age groups regarding diagnosis of different eye diseases. **Conclusion:** It could be concluded that due to the presence of a variety of ocular disorders that affect different anatomical parts of the eye, routine clinical examination and screening programs to decrease the incidence and prevalence of ocular morbidity are required.

Keywords: Pattern of eye diseases, ophthalmology clinic, Cairo, Al-Azhar University, Egypt.

INTRODUCTION

A study of the pattern of the eye diseases is very essential because while some eye conditions are only causing of ocular morbidity, others invariably lead to blindness. However, some conditions such as refractive errors and cataract are curable, others like measles and vitamin A deficiency are largely preventable [1]. Prevalence of eye diseases vary in different communities according to several factors, which include social and environmental characters of the community, health habits of the community, personnel hygiene and technical procedures used in the diagnosis of eye diseases [2], [3].

Trachoma is still the chief cause of infectious blindness in the world [4]. Visual impairment and blindness remain a major problem in the world nowadays. There are an estimated 161 million suffering from visual disability and 37 million people worldwide suffering from blindness; around 80% of these are preventable. Cataract, which can be simply operated upon and cured, is responsible for more than half of the blindness in the world. Glaucoma, diabetic retinopathy, trachoma, uncorrected refractive error and childhood blindness make up the rest [4]. Globally, cataract is considered the principal cause of blindness. Smoking, diabetes, and exposure to UVB light have been recognized as risk factors for cataract development [5]. Deficient protective measures in workplaces appear to be the main cause of ocular injury, especially in young males. It can be assumed that health education, as well as application of safety measures and protocols, will significantly reduce the incidence of ocular injuries in the target population [6]. Diabetic retinopathy (DR) was 20.5% among Egyptian diabetic patients who were above 18 years of age; where 82% of patients were unaware of the dangers of diabetes on the eyes [7]. Hypertension is considered also a major risk factor for the development of hypertensive retinopathy and other retinal vascular diseases, such as retinal vein and artery occlusion, and ischemic optic neuropathy**.** Moreover, high blood pressure increases the risk of both development of diabetic retinopathy and its progression. The etiology and disease mechanisms of both diabetes and hypertension are overlapped. They share many common risk factors e.g. dyslipidemia, proteinuria [8]. Early diagnosis and treatment can prevent all diabetic ocular complications. However, the cornerstone for prevention of these complications are through Good control of blood glucose and other systemic risk factors such as hypertension and hyperlipidemia [9]. A clear awareness of the pattern of eye diseases will form a framework which will utilize to effectively prevent or treat diseases that may cause blindness. This in turn will decrease needless blindness and visual impairment, and eventually, it will help to get their full potential in life [10]. This type of study is helpful to get an idea about the epidemiology of any ocular disorder. It is necessary to organize community education and ensure early treatment to reduce the prevalence of these diseases in the general population [11].

The aim of this work was to determine the pattern of different eye diseases among patients attending the ophthalmic outpatient clinic of Al-Zahraa University Hospital.

SUBJECTS AND METHODS

This observational Descriptive Cross-Sectional study included a total of 500 patients attending at

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Outpatient Clinic of the Ophthalmology Department, AL-Zahraa University Hospital. This study was conducted between December 2018 to August 2019.

Ethical consideration:

The study was approved by the Ethical Committee at the Faculty of Medicine for Girls, Al -Azhar University. At the beginning of the interview, an informed oral consent was obtained from participants after explanation of the purpose of the study and before participation in the study. Complete confidentiality was ensured for all patients. The patient had the right to refuse to participate without affection of the care given to him/her.

All participants were subjected to:

A. Fulfilling a predesigned questionnaire including questions about demographic data including (age, gender, occupation, residence, marital status).
B. Detailed ophthalmological history including ocular past history, any systemic diseases especially diabetes mellitus and hypertension and the ocular complaints and its onset, duration.
C. Ocular examination:

1. Meticulous examination was done to the patients: -
   - Simple eye examination by torch, testing for strabismus.
   - Auto refraction, visual acuity testing.
   - Fundus examination.
2. Both eyes were examined with a slit lamp
3. The intraocular pressure was measured by the applanation tonometer.

Statistical design:

The collected data were coded, fed to the computer and organized.

-Statistical analysis was done by using **S**tatistical **P**ackage for **S**ocial **S**cience (SPSS) program version 25.

-Descriptive statistics: data were presented by numbers and Percentages.

-A significance (Chi-square) test was used for comparison between the studied groups.

-The level of significance was taken at p-value < 0.05.

-Results were presented in tables and figures.

RESULTS

A total number of 500 participants were included in this study from the outpatient clinic of the Ophthalmology Department at Al-Zahraa University Hospital**.**

In this study the pattern of eye disease varied according to the gender, different age group and occupation. It was higher in females (51.2%) than males (48.8%) and representing the highest percentage at the age group 40-59 years (32.6%)**.** The highest reported disorder among the studied group was **retinal diseases** (21.6%), mainly among those aged 40-60 years (37.4%). Proliferative Diabetic retinopathy was the highest type (12.6%) followed by Non proliferative diabetic retinopathy (6.8%).

There were19.6% of the studied cases having **errors of refractions** mainly among teenagers 54.2% of those aged ≤18 years and 29.0% of those aged 19-39 years old. **Myopia** was the highest type (46%) followed by Astigmatism (39%) and hyperopia (15%). **Lens diseases** were reported among 17 % of the studied group; mainly among those aged 60 years and above (53.4%). **Eye lid diseases** reported among 12.8% of the studied group mainly among those aged 19-39 years old (23.2%). Meibomian gland dysfunction was the highest reported type (25.7%).

There were (12.4%) of the studied group having **Conjunctival diseases** mainly (28.9%) among teenagers (those aged ≤18 years). MPC & Trachoma were the highest recorded type (16.0%) followed by allergic conjunctivitis (15.4%); both were higher among males. Regarding **Trauma,** there was 6% of the studied group reported having trauma; mainly among manual workers (25%) and drivers (13.3%).

Figure1 and 2 show the age and gender distribution among the studied group. There were 51.2 % females versus 48.8 % males, where (32.6 %) were in the age group from 40-59 years, and (27.6 %) were in the age group of 19-39 years.

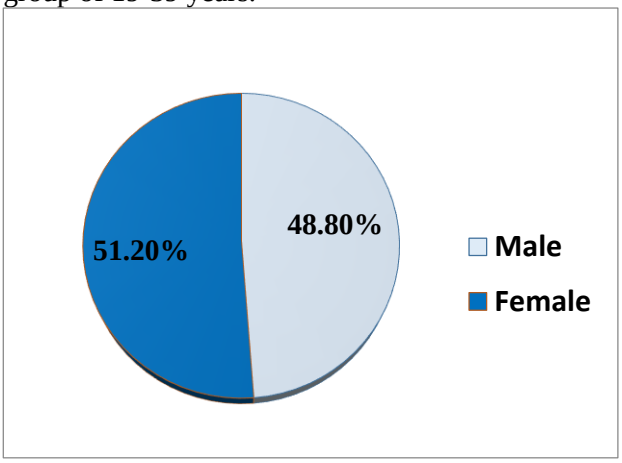

Figure 1: Gender distribution among the studied group.

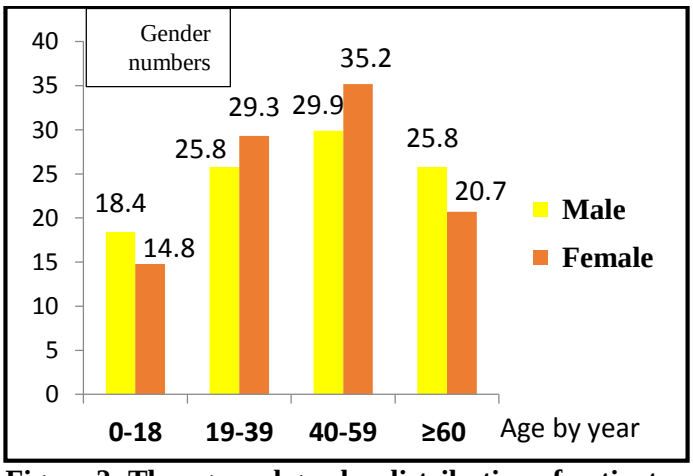

Figure 2: The age and gender distribution of patients.

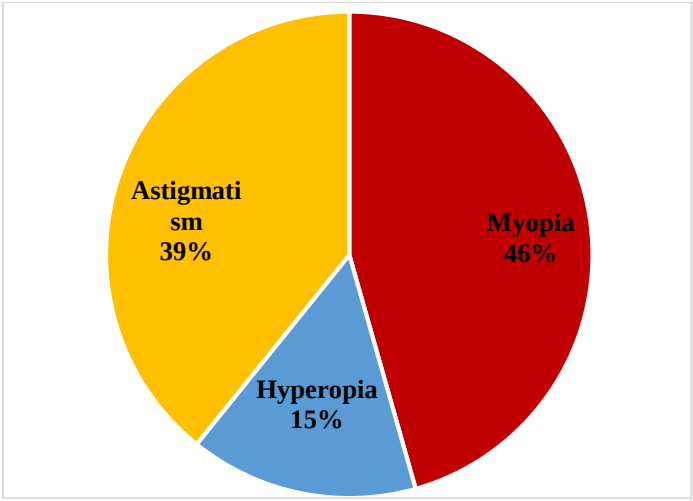

Figure 3: Showed the percentage of myopia, hyperopia and astigmatism

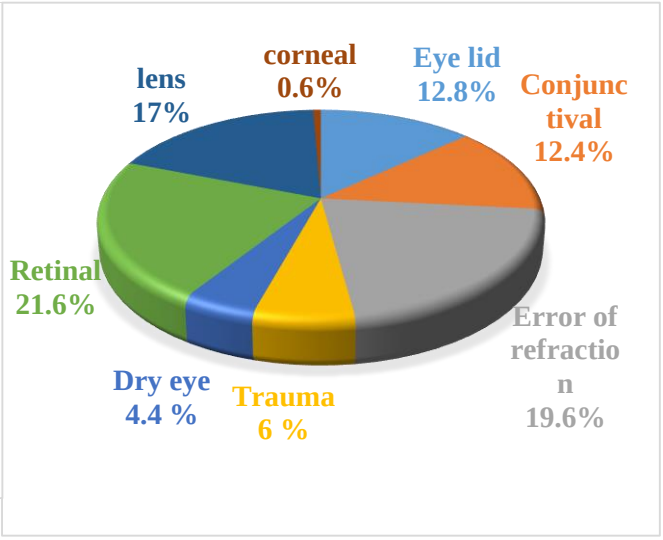

Figure 4: This figure showed the percentage of different eye diseases among the studied group

Table 1: Eye lid diseases, conjunctival manifestations, corneal affections among the studied group by gender

Items	Male N=244 (%)	Female N=256 (%)	Total N=500 (%)	X^2	p-value
Eye lid examination					
Normal	25.1	25.9	50.9	.009	0.002
Meibomian gland dysfunction	**12**	**13.6**	**25.7**		
Scaly blepharitis	**2.2**	**5.8**	**8**		
Chalazion &Stye	4.8	2.4	7.2		
***Other lid disorders**	5.4	3.8	8.2		
Conjunctival conditions					
Normal	60.2	67.6	64.0	0.079	0.052
MPC&Trachoma	16.4	15.6	**16.0**		
Allergic conjunctivitis	16.0	14.8	**15.4**		
Pterygium	2.9	0.8	1.8		
Subconjunctival haemorrhage	4.5	0.8	2.6		
Bitots spot	0.0	0.4	0.2		
Corneal conditions					
Normal	87.7	90.2	89.0	0.026	0.008
Punctate keratitis	5.3	7.4	**6.4**		
Ulcer	3.3	0.8	**2.0**		
Corneal abrasions	0.8	1.6	**1.2**		
Opacity	2.0	0.0	1.0		
Kerato precipitates	0.8	0.0	0.4		

Table 2: Conditions related to pupil, anterior chamber, iris and lens among the studied group by gender

Items	Male N=244 (%)	Female N=256 (%)	Total N=500 (%)	X^2	p-value
Pupil conditions					
Normal	91.0	94.9	93	0.246	0.177
RAPD	8.2	5.1	6.6		
Sphincter tear	0.4	0.0	0.2		
Traumatic mydriasis	0.4	0.0	0.2		
Anterior champers					
Normal	96.3	99.6	98	0.031	0.017
Flare and cells	**3.3**	**0.4**	**1.8**		
Shallow	0.4	0.0	0.2		
Iris					
Normal	90.2	89.8	90	0.611	0.494
Iridocyclitis	1.6	0.4	1.0		
Rubiosis iridis	**7.0**	**8.2**	**7.6**		
Persistent pupillary membrane	0.4	0.4	0.4		
Leucoma adherent	0.4	0.8	0.6		
Iridodenisis	0.4	0.4	0.2		
Traumatic iritis	0.4	0.0	0.2		
Lens					
Normal	70.1	77.7	74	0.242	0.202
Lens dislocation	0.8	0.4	0.6		
Lens sublaxation	1.6	0.4	1.0		
Aphakic	0.4	0.0	0.2		
Pseudophakic	6.1	3.5	4.8		
Cataractous lens	**20.9**	**18.0**	**19.4**		

DISCUSSION

Vision is an essential requirement for learning and communication. Further, optimal vision is important for learning, health and educational requirements [12].

In the present study the majority of participants were females (51.2%) where males represented (48.8%). This could be due to most of them were housewives (36% of the female group), where they can attend the clinic at any time without commitment to work.

In a similar study carried out in Ghana, the majority of participants were also females (61.8%) while (38.2%) were males[13].

In this study retinal diseases were the most common eye disorder seen (20.2%). Diabetic retinopathy represented 19.2% of them 12.6% had PDR and 6.8% had Non-PDR. This high percentage of DR was related to the fact that 26% of the studied group had DM and 20.2% of them had HTN. Also, it could be explained by lack of awareness about the importance of regular eye exam for diabetic patients so presented to the clinic with more advanced complications such as the PDR.

In accordance with these results a study done in Egypt showed that diabetic retinopathy represents 27%.this is relatively high and could be explained by the high level of obesity, bad dietary habits and low level of education [8].

Results of the present study revealed that Errors of refraction were the second most common eye disease (19.6%). Mainly (54.2%) among teenagers (those aged ≤18 years) and 29.0% among those aged 19-39 years old.

Similar results of a study carried out in Southwestern Nigeria which reported that refractive error representing 19.5% [14].While a study conducted in Ghana, revealed that refractive error representing 26.30 % [15].

However, another study conducted in Ghana revealed that uncorrected refractive errors were the fourth commonest cause of ocular morbidity with a

prevalence of 8.90%. The low prevalence in this study could be due to ignorance as some patients fail to complain of poor vision to eye care providers because of negative perception about spectacle wear and the cost involved in getting one [13].

While, hyperopia was the commonest refractive error in a private optometry practice in Nigeria, Bagaiya and Pam states [16].

In this study, we found that cataract was the third most common eye disease (16.8%) among the studied group, mostly among the retired persons (23.2%) and those of aged above 60 (53.4%).

In the same context results of previous studies revealed that cataract was 33.3% in southeastern Nigeria and in Saudi Arabia one of the most common causes of blindness was cataract, about 7% of all Saudi Arabians and 42% of those older than 40 years developed cataract [17], [18].

However, cataract was reported among 13.3% of cases from a semi-rural hospital in France [19]. Moreover a study carried out in China revealed that cataract was 35.0% [20].This higher incidence of cataract of the previous study in comparison to the present study may reflect environmental or genetic factors or may be due to difference in awareness and seeking medical advice.

In this study, we found that eye lid diseases were the fourth most common eye disease representing (12.8%), the most common eye lid diseases were meibomian gland dysfunction represent 25.7**%** and the second most common one was scaly blepharitis (8%), this relatively high percentage may be due to environmental factors**,** pollution, bad hygiene especially lack of face cleaning and also could be related to occupation such as drivers (20.0%) and near workers (42.1%). This is supported by the high percentage of lid diseases among near workers and drivers 48.7%, 20% respectively.

These results were in contrary with the results of a study carried out in Egypt revealed that lid diseases were the second most common ocular disorder, representing 27.4% of cases, where chalazia and blepharitis were more common among this category. This relatively high percentage of infectious eye lid diseases may be due to lack of proper hygiene and eye health education [21].

Additionally, our study revealed that conjunctival diseases were 12.4% of which 16% was of MPC and 15.4% was of allergic conjunctivitis, with predominantly (28.9%) of the age group below 18years; this is more reasonable because conjunctival diseases are common in children.

On the contrary, a study carried out in the Southwestern Nigeria reported that infective conjunctivitis and allergic conjunctivitis were common reasons why patient presented at the eye clinic[22].

Additionally, in this study dry eye was reported among 4.4% of the studied group, this is relatively low prevalence and could be due to patient's negligence of their eye symptoms as well as lack of awareness about dry eye and its association with the different climate conditions**.**

Also**,** a study carried out in Egypt revealed that the dryness was the fourth most common presentation (10%) [21].

On the other hand, a study conducted in Jordan reported that dry eye was representing (49%).This is a relatively high percentage in comparison to our study that could be related to increased awareness about the symptoms and hazards of dry eye as well as differences in climate conditions [23].

Results of the present study revealed that eye trauma was reported among 6% of the studied group, of which the most common type was blunt trauma (4%) followed by corneal and conjunctival foreign bodies and corneal abrasion (2.2%).

In a similar study carried out in Egypt reported that ocular trauma represents (6.8%) with the majority of trauma cases 80% being minor injuries (impacted corneal and conjunctival foreign bodies and unintentional blows to the eye[21].

On the contrary a study carried out in Uttrakhand reported that the magnitude of ocular trauma was found to be 1.03% out of total ocular patients seen in the outpatients department[24].While another study carried out in South West Ethiopia reported that ocular trauma was found to be (6.9%) [25].

Early detection of Ophthalmological disorders via the initiation of routine Ophthalmological clinical examination as screening programs may contribute to decrease the incidence and prevalence of ocular morbidity. Further study of eye diseases at the community level is required to design proper preventive and curative strategies for eye diseases in the community.

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Conflicts of interest

There are no conflicts of interest.

CONCLUSION

It could be concluded that due to the presence of a variety of ocular disorders that affect different anatomical parts of the eye, routine clinical examination and screening programs to decrease the incidence and prevalence of ocular morbidity are required.

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