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Analysis of Demographic Characteristic and Some Risk Factors for Patients with Cataract in Southern of Iraq

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Abstract

Introduction. Cataract is aging disease which characterised by cloudiness of normal lens, although it mostly related to age but it can occur in very young ages.
Purpose. to examine the relationship between cataract occurrence and various demographic factors to identify potential risk contributors. Understanding these associations helps update prevalence data, raise awareness, and guide preventive efforts, especially in high-risk populations.
Materials and methods. Cross-sectional study was conducted on cataract patients. The total number of the participants were 629.
Results. That there is significant correlation among these factors (age, smoking, diabetes, hypertension, residency, drug intake). Conversely, it showed no statistically association between cataract patients and sex nor between surgery on the eye.
Conclusion. This study demonstrates a significant association between cataract occurrence and number of demographic and clinical factors, these results highlight the importance of focusing on early detection and lifestyle modifications to reduce the risk of cataract development in high-risk groups.
Keywords: cataract, diabetes, hypertension, blindness

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Анализ демографических характеристик и некоторых факторов риска у пациентов с катарактой на юге Ирака

Конфликт интересов: не заявлен.
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Резюме

Введение. Катаракта – это возрастное заболевание, характеризующееся помутнением нормального хрусталика. Хотя это заболевание в основном связано с возрастом, оно может возникнуть и в очень молодом возрасте.
Цель. Изучить взаимосвязь между возникновением катаракты и различными демографическими аспектами для выявления потенциальных факторов риска. Понимание этих взаимосвязей помогает обновить данные о распространенности, повысить осведомленность и осуществить профилактические меры, особенно в группах высокого риска.
Материалы и методы. Было проведено поперечное исследование с участием пациентов с катарактой. Общее число участников составило 629 человек.
Результаты. Установлена значимая корреляция между такими факторами, как возраст, курение, диабет, гипертония, место жительства, прием лекарств. Напротив, статистически значимых корреляций между пациентами с катарактой и полом, а также между перенесенными хирургическими вмешательствами на глазах не выявлено.
Заключение. Данное исследование демонстрирует значимую взаимосвязь между возникновением катаракты и рядом демографических и клинических факторов. Эти результаты подчеркивают важность раннего выявления и изменения образа жизни для снижения риска развития катаракты в группах высокого риска.
Ключевые слова: катаракта, диабет, гипертония, слепота

■ INTRODUCTION

Cataracts are among the primary causes of blindness globally [1]. While cataracts mostly affect older adults, they can also occur in children [2]. Several factor other than aging can induce cataract formation in normal lens and disrupt the vision sight, including oxidative stress [3], reduction in antioxidant will increase the oxidative stress which make corneal lose it transparency [4], diabetes [5] by elevated blood sugar has been found to

increase blood sugar in the aqeuos humor [6, 7], hypertension [8] high blood pressure can induce cataract formation by Promote oxidative damage to lens proteins.

Demographic studies play an important role because it helps in determining the prevalence of cataract disease across different ages and gender, study conducted by Prasad 2020 finds that cataract blindness was higher in female compared to male [9]. Meanwhile increasing air pollution [10] and climate shift [11], may all have a role in increasing the incidence of cataract among different ages.

This study aims to investigates the association between cataract development and a range of demographic and clinical variables, including underlying health conditions, also predict future population changes. Understanding and describing the demographic profile of the population in (Nasiriyah – Iraq) giving attention to important factors, the information from this study may help the public health plans, also understanding those patterns are very critical for developing effective treatment strategies and prevention.

■ MATERIALS AND METHODS

Study design and cataract patients

A cross-sectional study was conducted cataract patients, registered at Al-Nasiriyah Teaching Hospital in Thi-Qar governorate, Iraq. Between the period from during a period between September 2024 and January 2025. The total number of the participants under this study between this period were (629) there ages ranges from 7 to 80 years old.

Ethical approval

All ethical approval was obtained from the institution, and all the procedures were thoroughly explained to each patient individually prior to participation.

Main demographic categories

All participants included in the study were diagnosed with cataracts and met the inclusion criteria, regardless of the presence or absence of comorbidities such as diabetes and hypertension.

Statistical analysis

Statistical analysis was obtained using SPSS specifically using chi-square test.

■ RESULTS

Table 1 show the distribution of cataract patients among different age group, the majority of patient was between 40–60, representing 58.2%, followed by patients from 60 and more representing 34.7%, while those between the age 20–40 representing 5.4%, and those under the age of 20 representing 1.7%, and it shows that's it's statistically significant among different age group.

Table 2 represent the distribution of cataract patients according to sex differences, which shows that there's no statistically significant relationship between the occurrence of cataract and sex differences (p=0.073).

Table 3 in the present study suggest that there's statistically significant relationship with p value (0.00), smokers representing (35.3%) from the total population while non-smokers representing (64.7).

Table 1
Age-Wise Distribution of Patients Diagnosed with Cataract

	Patients	
Age**	**No.**	**%**
>20	11	1.7
20–40	34	5.4
40–60	366	58.2
<60	218	34.7
P=0.00		

Table 2
Sex-Based Distribution of Patients Diagnosed with Cataract

	Patients	
Sex NS**	**No.**	**%**
Male	292	46.4
Female	373	53.6
P=0.073		

Table 3
Smoking Status Distribution Among Patients Diagnosed with Cataract

	Patients	
Smoking**	**No.**	**%**
Yes	407	64.7
No	222	35.3
P=0.00		

Table 4 shows that there's statistically significant relationship between residency state and the occurrence of cataract with p value (0.00), patients living in the central area representing (61.4%) while the peripheral area representing (38.6%).

Table 5 shows that there's statistically significant relationship between the occurrence of cataract and diabetes with (p=0.00), cataract patients with diabetic representing (63.4%) while non-diabetic representing (36.6%).

Table 4
Geographic Distribution of Cataract Patients Based on Residency

	Patients	
Residency**	**No.**	**%**
Central area	386	61.4
Peripheral area	243	38.6
P=0.00		

Table 5
Comparison of Cataract Patients with and without Diabetes

	Patients	
Diabetic**	**No.**	**%**
Yes	399	63.4%
No	230	36.6%
P=0.00		

Table 6
Comparison of Cataract Patients with and Without Hypertension

	Patients	
Hypertension **	**No.**	**%**
Yes	418	66.5
No	211	33.5
P=0.00		

Table 7
Comparison of Cataract Patients with and Without Previous Eye Surgery

	Patients	
Surgery in the eye NS	**No.**	**%**
Yes	322	51.2
No	307	48.8
P=0.55		

Table 8
Comparison of Cataract Patients with and Without a History of Drug Use

	Patients	
Drug intake**	**No.**	**%**
Yes	376	59.8%
No	253	40.2%
P=0.00		

Table 6 shows that there's statistically relationship between the occurrence of cataract and hypertension with p value (0.00), cataract patients with hypertension representing (66.5%) while the ones without hypertension representing (33.5%).

Table 7 shows that there's no statistically relationship between cataract patients underwent eye surgery in the past six month and who did not, p value (0.55), cataract patients who underwent eye surgery representing (51.2%) while those who did not representing (48.8%).

Table 8 show that there's statistically significant relationship between drug intake and the occurrence of cataract with p value (0.00), cataract patients who take drug representing (59.8%) while those who do not use drug representing (40.2%).

■ DISCUSSION

The findings of our study match the ones of Xing Chen 2020 which revealed that the highest age for having cataract was among the age group 60–69 [12]. There are many reasons behind the development of cataract in elderly people, including continuous exposure to sunlight, undiagnosed diseases like diabetes, hypertension and other disease, some type of drugs, and smoking, overtime the body's ability to reduce the oxidative stress decrease. All these factors can lead over time to protein aggregation leading to cloudiness.

The participants were classified according to sex in to males and females, in the present study there's no statistically relationship between gender and cataract development, although the prevalence of cataract where slightly higher in females than males, in spite

of some previous studies have reported gender differences in development of cataract our study didn't match with a study conducted by Park Y.H. 2014 found the prevalence of cataracts were higher in females than males [13].

Our study matches with the result of Obianozie T.I who found that gender does not affect cataract development, and there's no statistically significant relationship although the prevalence of cataract was slightly higher among females than males [14].

This result does not mean there's no influence of gender on cataract development but may be this influence is not as strong as other factor like smoking, genetic predisposition and exposure to sunlight and A larger sample size is needed to confirm the accuracy of this result.

The smoking state of participants which show that 64.7% of patients diagnosed with cataracts were smokers while non-smokers their percentage was 35.3%.

Our study matches the result of study conducted by Kurt, A.2023, which reveals the smoking status has influence on the cataracts formation between Turkish population and increase the rate of having cataracts in earlier age [15].

Also matched with Gaffer 2023 who find that most cataract patients were smokers [16]. In this study higher number of cataracts patients was among smokers, several factors can be behind this phenomenon, one of these are tobacco products contain harmful chemicals in the cigarette smoke (ex: nicotine) which can alter the protein the lens and overtime become cloudy.

Smoking also increased the risk of getting systemic disease like diabetes or hypertension both are risk factors for cataracts formations.

In the present study, the highest number of cataract cases came from those individuals living in the center than those living in the periphery.

Our study agreed with previous studied and disagreed with others, we matched with a study conducted by Yu W.S 2021 who suggest that people live in urban area have higher risk of developing cataract than those living in remote area [17].

Our findings may have several explanations for this phenomenon, high level of air pollution which may contribute to cataracts formation by inducing oxidative stress, other factors prolonged exposure to artificial light like the light from the led screen, which also can contribute to oxidative stress, furthermore the center of the cities is hotter.

In our study the number of cataracts patients with diabetes is higher than those without diabetes, our study matched with Li L., 2014 who found that patients with type 2 diabetes have greater risk of getting cataract [18].

Also matched with Tomić 2021 who found that type diabetes is associated with development of cataract [19]. It can be explained by elevated blood glucose levels, which result in the accumulation of glucose within the lens.

The current study revealed that cataracts patients with hypertension are higher than those without hypertension. Our study aligned with Mehta 2016 who revealed that cataract patients with hypertension are higher from those without [20].

It can be explained by that hypertension can induce oxidative stress [21] which can cause damage to lens protein, also taking medication especially corticosteroids can induce cataract formation [22].

The current study revealed that there is no significant relationship between cataract patients who never underwent eye surgery and those who did it, which show that the rate of cataract development was about the same between both groups, the difference wasn't big enough to be meaningful or statistically significant.

This rely on several factors, depends on the type of the surgery were not high risk for cataract development, sample size was not large enough to detect a difference and cataract risk is influenced more by age, diabetes, and other factors.

The present study demonstrated that the number of cataract patients who utilised medication was greater than the number of those who did not.

Our study aligns with Kačmař 2025 who found a corelation between the incidence of posterior subcapsular cataract and utilization of steroids [23].

Also, our study match with Sharma 2019 who revealed that corticosteroid induce cataract formation [24]. This can be explained by that the structure or the metabolism of the eye's lens can be altered by certain drugs which lead to clouding of the lens.

■ CONCLUSION

In conclusion, there is a significant relationship between cataract patients and age, smoking, residency, diabetes, hypertension and drug intake. Conversely, no statistically significant association has been observed between cataract patients and sex, nor between surgery on the eye factor.

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