

RISK FACTORS OF GLAUCOMA DISEASE AMONG PATIENTS ATTENDING GLAUCOMA COUNSELLING HEALTH FACILITY AT KWARA STATE SPECIALIST HOSPITAL, SOBI, ILORIN, NIGERIA

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Abstract: Glaucoma is a disease that damages the optic nerve and is a principal cause of vision loss throughout the world. Therefore, this study investigated the risk factors of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi, Ilorin, Nigeria. A descriptive research design of survey type was used. Close-ended questionnaire was used for the data collection. The instrument used for the study was validated by using three specialists in the related fields. A reliability co-efficient of 0.75r was obtained through test-retest technique using Pearson Product Moment Correlation. The hypotheses raised had been examined using the inferential statistics of Chi-square at 0.05 alpha level of significance. The findings of the study confirmed that hereditary, consumption of poor diet and drug abuse were the risk factors for glaucoma disease among patients attending glaucoma counselling centres. The researchers concluded that the patients attending glaucoma counselling health facility suffer from the condition due to glaucoma sickness that runs in their families, excessive consumption of salt, excessive consumption of coffee and caffeinated beverages, day by day consumption of cigarette and use of unprescribed eye drops. The researchers recommend that there is need for health officers to enlighten the patients attending glaucoma counselling health facility on the benefits of advising their household members particularly those above 30 years of age to undergo comprehensive eye dilation examination to forestall vision loss which cause through glaucoma disorder.

Keywords: Glaucoma, Health Facility, Hospital, Risk Factors, Patients .

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INTRODUCTION

Glaucoma is a disease that damages the optic nerve and is a principal cause of vision loss throughout the world. Globally, about 87% of the visually impaired are residing in growing countries. The World Health Organization world goal in vision 2020 for the right to sight initiative is to decrease blindness occurrence to much less than 0.5% in all nations or less than 1% in all neighbourhoods (Usifoh et al. 2014). Glaucoma is a principal cause of irreversible blindness worldwide. Globally, it is estimated that 5.7 million human beings are visually impaired as a result of glaucoma. Increased Intraocular Pressure (IOP) is the greatest risk factor in glaucoma. IOP reduction is presently the mainstay of glaucoma treatment. It has been shown that IOP reduction enormous delays glaucoma development using optic disc damage and visual field loss. This is commonly accomplished by using anti-glaucoma medications, laser therapy, or surgical intervention (Owaifer & Abdulaziz, 2018).

Kyari et al. (2013) opined that glaucoma is the second main cause of blindness, accounting for 8% of blindness amongst the 39 million human beings who are blind worldwide. In Africa, glaucoma accounts for 15% of blindness and it is the region with the highest incidence of blindness relative to other regions worldwide. In 2006, modelling the reachable data, it was estimated that 60.5 million human beings worldwide would have glaucoma by 2010, increasing by 20 million by 2020. Problem of glaucoma in Africa might also be attributed to genetic diversity as well as environmental and socio-economic factors. Glaucoma has been referred to as the "silent thief of sight". Lately, there has been expanded momentum about glaucoma care in Africa. At the World Glaucoma Association 1st Africa glaucoma summit held in Ghana in 2010, a decision was once made to strengthen and incorporate

glaucoma management, education and training into present programs. The Kampala decision in 2012 called upon all those concerned in glaucoma management "to spotlight the significance of controlling vision loss from glaucoma is an essential section of eye health care and in health and protection policies".

Heredity and genes actually play an essential function in the transmission of physical and social traits from mother and father to offspring. Different traits of growth and development like intelligence, aptitudes, physique structure, height, weight, colour of hair and eyes are highly influenced by means of heredity (Moronkola, 2017). Meg (2016) opined that nature's endowment with physique constitutional factors or elements determines suitable health or ill health. Parents transmit certain traits genetically to offspring. A wide variety of these traits encompass predisposing to behave in certain ways. These organic factors decide a lot of things for the individual. The gene we acquire from our mother and father decide many of our traits such as what we seem to be like, how we grow, our resistance to disease, how well we heal, and how properly we adapt to our psychological environment.

Mohan (2013) explained that genetic illnesses are triggered through abnormalities in genes or chromosomes. They are precipitated due to mutations in certain genes and are inherited when the genetic fabric is passed down from one era to another. Diseases are inherited when faulty genes in either mother or father are duplicated in their offspring. Also, Janey (2007) opined that glaucoma disorder can be inherited as a mendelian autosomal-dominant or autosomal-recessive trait, or as a complicated multifactorial trait. Genetic techniques have helped define the underlying molecular occasions accountable for some mendelian types of the disorder and have recognized the chromosome locations of genes that are possibly to make contributions to

common complicated forms. A household records of the ailment has long been identified as a foremost risk element for glaucoma, suggesting that particular gene defects make contributions to the pathogenesis of the disorder. Glaucoma may also be inherited as mendelian-dominant or mendelian-recessive trait (usually early-onset types of the disease) or may also showcase a heritable susceptibility consistent with complicated trait inheritance (typically adult-onset types of the disease).

Moronkola (2017) opined that diet is the meals fed on and utilized through the body, humans consume meals to live, grow, keep healthy and well, and get power for work and play. Food is a substance either plant or animal in origin, taken to provide energy, produce growth and maintains life. Foods to human beings have a lot of significance such as economic, health, social and psychological importance. Meg (2016) explained that diet is the manner through which living organisms obtain and make use of certain substances that are essential to its existence and good health. Nutrition is vital to good health due to the fact we rely upon the nutrients in the meals for growing and repairing physique tissues and other materials and as regulates of essential body processes.

Christ (2015) opined that glaucoma is a main cause of blindness among adults. The disorder includes an extend in strain in the eye, which distorts the form of the eyeball, unfavourable the lens of the eye, and resulting in blindness. This disorder can be mitigated to an extent with eye drops, and cannabis, too, has proven to be of help. Sadly, many people go blind due to glaucoma. Now, a study has shown that consuming the proper meals may additionally assist to reduce the danger of glaucoma, forestall the disease, and assist humans to keep healthy eyesight longer in life. Taking too plenty salt can expand universal blood pressure, leading to multiplied intraocular pressure in the eyes, exacerbating glaucoma. Therefore,

reasonable salt consumption has been a preferred dietary advice for those with, or at risk for, glaucoma. Intake of meals prosperous in retinol— a form of vitamin A— helps to reduce the chance of glaucoma. Retinol-rich ingredients encompass milk, liver, cheese and butter. Interestingly, there was no proof that a food plan prosperous in dietary fat has any function in the promoting of glaucoma, even though it is nicely established that, in general, excessive consumption of fat contributes to weight problems and cardiovascular disease.

Fredrick et al. (2014), explained that drug abuse is on occasion referred to as substance or chemical abuse. It is the deliberate or intentional use of a chemical substance generally for motives different than the legit scientific motive that effects into any degree of physical, mental, emotional or social impairment for the user, the users' household or society in general. Some of the elements related with drug abuse include; peer pressure, availability of drugs, curiosity, loneliness, bad parent communication, a signal of maturity, to accomplish a task, to cope with the challenges at college or work and lack of parental supervision.

The end result of study carried out by Dustin et al. (2011) on 5.3 million men and ladies sufferers attended Veterans Affairs outpatients' clinics for 12 months duration which focus on substance use disorder and the risk of open-angle glaucoma. The study published that use of cocaine is predictive of open-angle glaucoma which is the most common kind of glaucoma. Current and former cocaine users had a forty-five per cent multiplied chance of glaucoma disease. Jason et al. (2013) explained that drug and alcohol abuse can produce a range of ocular and neuro-ophthalmic side effects. Novel so-called 'designer', drugs of abuse can lead to uncommon ocular disorders. Legal substances, when used in manners for which they have no longer been prescribed, can also have devastating ophthalmic consequences.

Every organ in our physique is vital with its unique functions at all times. When our sense of seeing works efficiently it offers us pleasure and happiness which we are not grateful for. Blindness can be precipitated through many elements known to man, some blindness are reversible however some blindness can solely be avoided at the onset before it damages the optic nerve completely. Glaucoma disorder is precipitated through an enlarge in intraocular strain which damages the optic nerve connecting the eye with the brain. Many people do no longer apprehend the risk of glaucoma and how fast it claims sight or how gradual vision deteriorates. A blind individual amid others is an out-cast and experiences social discrimination, isolation and stigmatization on their condition. Despite the effort of public health workers, clinical officers and other health officers to stop the prevalence of glaucoma disease. The researchers observed that the number of people developing glaucoma disorder kept on growing daily which influences their high-quality self-concept; hinder their mobility, cause social discrimination, isolation and stigmatization on their condition. The objectives of the study were as follows: (i) To investigate if glaucoma disease experience by patients constitutes a risk factor among patients attending glaucoma counseling health facility, (ii) To explore if consumption of poor diets among patients attending glaucoma counseling health facility contribute to a risk factor of glaucoma condition among patients attending glaucoma counseling health facility, and (iii) To examine if use of illegal and unprescribed eyes drops constitutes a risk factor of glaucoma disease among patients attending glaucoma counseling health facility at Kwara State Specialist Hospital Ilorin, Nigeria.

Research Hypotheses

The hypotheses formulated for the study were as follows:

1. Hereditary is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.
2. Consumption of poor diet is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.
3. Drug abuse is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.

METHOD

Study area

The study was carried out at the Sobi Specialist Hospital, Ilorin, Kwara State which located at Sobi road, Alagbado Ilorin. Sobi Specialist Hospital, Ilorin is a secondary health care facility established in April 1985 by the Kwara State Government, located in the north central part of Nigeria. The primary ethnic group of Kwara State is Yoruba, with Nupe, Bariba, and Fulani as minorities. The facility provides health services for citizens in Kogi, Niger, Osun, Oyo, and Ekiti States and other neighboring states in Nigeria (Bello & Ibrahim, 2013).

Participants

A descriptive research format of survey kind was adopted for the study. This approach was used due to the fact that the study requires the researchers to collect data to describe the study in details. The populace of the study comprised of all patients affected with glaucoma disease and target populations involves of all registered glaucoma patients that receiving treatment and health care at the Kwara State specialist hospital Sobi, Ilorin. A total of one hundred and twenty-six patients registered at the glaucoma counselling health facility at the time when the research was conducted. The stratified random sampling method was used to

put into strata the range of patients eligible to take part in the study. Patients under ages 18 years excluded to partake in the study and numbers of patients with ages under 18 years were twenty-six. Purposive sampling method was used to pick one hundred respondents that participated in the study.

Measures and Procedures

The permission to carry out the study was received through the consent form filled by every respondent and a researchers' developed questionnaire which was validated by three professionals in associated fields was used as an instrument for the study. The reliability of the instrument obtained via test-retest A reliability co-efficient of 0.75r was obtained. Copies of the questionnaire used for the study administered to the respondents in the course of their month-to-month counselling clinic day with the resource of three skilled research assistants.

Data Analysis

The data accrued had been sorted, collated, coded and subjected to suitable statistical analysis. The three formulated null hypotheses had been analyzed with the use of inferential statistics of chi-square at 0.05 alpha level of significance.

RESULTS AND DISCUSSION

Table 1 shows that more of the respondents fall within the age range of 42- 49 years old. The table further shows that more of the respondents were female and more of the respondents participated in the study were practising Islam as a religion. More so, most of the respondents participated in the study have no formal education and more of the respondents participated in the study were engaged in artisan occupation.

Hypotheses Testing

The results obtained from the three hypotheses used for the study are shown in Table 2, Table 3 and Table 4.

Hypothesis 1: Hereditary is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.

TABLE 1. Frequency and Percentage of Demographic Data of Respondents

S/N	ITEMS	FREQUENCY	PERCENTAGE (%)
1.	AGE RANGE		
	18-25years old	5	5.0
	26-33 years old	10	10.0
	34-41 years old	20	20.0
	42- 49 years old	39	39.0
	50 yeats and Above	26	26.0
	TOTAL	100	100.0
2.	Gender		
	Male	35	35.0
	Female	65	65.0
	TOTAL	100	100.0
3.	RELIGION		
	Islam	52	52.0
	Christianity	48	48.0
	TOTAL	100	100.0
4.	LEVEL OF EDUCATION		
	Non-formal	42	42.0
	Primary school	21	21.0
	Secondary school	20	20.0
	Tertiary	17	17.0
	TOTAL	100	100.0
5..	OCCUPATION		
	Civil servant	20	20.0
	Trader	35	35.0
	Atisan	38	38.0
	Farmer	7	7.0
	TOTAL	100	100.0

TABLE 2. Hereditary as a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin

S/ N	ITEMS	SA	A	D	SD	Row Total	Df	Cal. X ² Val.	Tab. X ² Val	Decision
1	Glaucoma disease runs in the households put the family members at danger of developing the condition	75 (75.0%)	22 (22.0%)	3 (3.0%)	0 (0.0%)	100	9	35.53	16.92	H ₀₁ Rejected
2	Children of parents that have glaucoma disorder are at risk of creating the disorder in future	50 (50.0%)	43 (43.0%)	6 (6.0%)	1 (1.0%)	100				
3	Pregnant mother surfer from glaucoma disorder put the unborn child at risk of creating the condition later in existence	42 (42.0%)	48 (48.0%)	5 (5.0%)	5 (5.0%)	100				
4	Glaucoma disease can be traceable to be a hereditary factor	40 (40.0%)	52 (52.0%)	5 (5.0%)	3 (3.0%)	100				
Column Total		207	165	19	9	400				

TABLE 3. Consumption of poor diet as a risk factor of glaucoma disease among patients attending counselling health facility at Kwara State specialist hospital, Sobi, Ilorin

S/ N	ITEMS	SA	A	D	SD	Row Total	Df	Cal. X ² Val.	Tab. X ² Val	Decision
5.	High consumption of salt increase danger of glaucoma disease	70 (70.0%))	28 (28.0%))	1 (1.0%)	1 (1.0%)	100				
6.	Excessive consumption of coffee and caffeinated beverages increase the risk of glaucoma disease	59 (59.0%))	40 (40.0%))	1 (1.0%)	0 (0.0%)	100	9	40.83	16.92	H ₀₂ Rejected
7.	Excessive consumption of red wine amplify risk of glaucoma disease	39 (39.0%))	55 (55.0%))	5 (5.0%)	1 (1.0%)	100				
8.	High consumption of black chocolate and green tea increase the danger of creating glaucoma disease	32 (32.0%))	60 (60.0%))	6 (6.0%)	2 (2.0%)	100				
Column Total		200	183	13	4	400				

TABLE 4. Drug abuse as a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin

S/ N	ITEMS	SA	A	D	SD	Row Total	Df	Cal. X ² Val.	Tab. X ² Val.	Decision
9.	Daily intake of cigarettes smoking increase risk of glaucoma disease	63 (63.0%))	33 (33.0%))	3 (3.0%))	1 (1.0%))	100				
10.	daily intake of alcohol increase the risk of glaucoma disease	40 (40.0%))	56 (56.0%))	4 (4.0%))	0 (0.0%))	100	9	25.65	16.92	H ₀₃ Rejected
11..	Daily consumption of marijuana increase the risk of glaucoma. disease	42 (42.0%))	48 (48.0%))	10 (10.0%))	0 (0.0%))	100				
12.	Use of unprescribed eyes drops increase the risk of developing glaucoma disease	40 (40.0%))	55 (55.0%))	3 (3.0%))	2 (2.0%))	100				
Column Total		185	192	20	3	400				

@0.05 alpha level

The findings from the analysis in Table 2 indicates the calculate Chi-square value of 35.53 in opposition to the desk value of 16.92 at 0.05 alpha level of significance with a degree of freedom 9. Since the calculated chi-square value of 35.53 is higher than the desk value of 16.92, thus, the null hypothesis one is not accepted, which means that hereditary is a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin.

Hypothesis 2: Consumption of poor diet is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.

@0.05 alpha level

The findings from the analysis on Table 3 indicates that the calculate Chi-square value of 40.83 in opposition to the table value of 16.92 at 0.05 alpha level of magnitude with a degree of freedom 9. Since the calculated Chi-square value of 40.83 is higher than the table value of 16.92, thus, the null speculation two is not accepted, which implies that consumption of poor diet is a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin.

Hypothesis 3: Drug abuse is not significantly a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State Specialist Hospital Sobi Ilorin.

@0.05 alpha level

The findings from the analysis on Table 4 indicates that the calculate Chi-square value of 25.65 in opposition to the table value of 16.92 at 0.05 alpha level of significance with a degree of freedom 9. Since the calculated Chi-square value of

25.65 is higher than the table value of 16.92, thus, the null speculation three is not accepted, which implies that drug abuse is a risk factor of glaucoma disease amongst patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin.

The end result of hypothesis one revealed that hereditary is a risk factor of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi Ilorin. The result of this finding was justified by using the statement of Mohan (2013) who explained that genetic illnesses are triggered through abnormalities in genes or chromosomes. They are precipitated due to mutations in certain genes and are inherited when the genetic fabric is passed down from one era to another. Diseases are inherited when faulty genes in either mother or father are duplicated in their offspring. Also, Janey (2007) opined that glaucoma disorder can be inherited as a mendelian autosomal-dominant or autosomal-recessive trait, or as a complicated multifactorial trait. Genetic techniques have helped define the underlying molecular occasions accountable for some mendelian types of the disorder and have recognized the chromosome locations of genes that are possibly to make contributions to common complicated forms. A household records of the ailment has long been identified as a foremost risk element for glaucoma, suggesting that particular gene defects make contributions to the pathogenesis of the disorder. Glaucoma may also be inherited as mendelian-dominant or mendelian-recessive trait (usually early-onset types of the disease) or may also showcase a heritable susceptibility consistent with complicated trait inheritance (typically adult-onset types of the disease).

The result of hypothesis two revealed that consumption of poor diet is a risk factor of glaucoma disease among patients attending glaucoma counselling

health facility at Kwara State specialist hospital, Sobi Ilorin. This discovering corroborates with the view of Christ (2015) who opined that glaucoma is a main cause of blindness among adults. The disorder includes an extend in strain in the eye, which distorts the form of the eyeball, unfavourable the lens of the eye, and resulting in blindness. This disorder can be mitigated to an extent with eye drops and cannabis, too, have proven to be of help. Sadly, many people go blind due to glaucoma. Now, a study has shown that consuming the proper meals may additionally assist to reduce the danger of glaucoma, forestall the disease and assist humans to keep healthy eyesight longer in life. Taking too plenty salt can expand universal blood pressure, leading to multiplied intraocular pressure in the eyes, exacerbating glaucoma. Therefore, reasonable salt consumption has been a preferred dietary advice for those with or at risk for glaucoma. Intake of meals prosperous in retinol— a form of vitamin A— helps to reduce the chance of glaucoma. Retinol-rich ingredients encompass milk, liver, cheese and butter. Interestingly, there was no proof that a food plan prosperous in dietary fat has any function in the promoting of glaucoma, even though it is nicely established that, in general, excessive consumption of fat contributes to weight problems and cardiovascular disease.

The result of hypothesis three stated that drug abuse is a risk factor of glaucoma disease amongst patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin. This finding was supported by the end result of study carried out by Dustin et al, (2011) on 5.3 million men and ladies patients attended Veterans Affairs outpatients' clinics for 12 months duration which focus on substance use disorder and the risk of open-angle glaucoma. The study published that use of cocaine is predictive of open-angle glaucoma which is the most common kind of glaucoma. Current and former cocaine users had a forty-five per cent

multiplied chance of glaucoma disease. Also, Jason et al, (2013) explained that drug and alcohol abuse can produce a range of ocular and neuro-ophthalmic side effects. Novel so-called 'designer', drugs of abuse can lead to uncommon ocular disorders. Legal substances, when used in manners for which they have no longer been prescribed, can also have devastating ophthalmic consequences.

CONCLUSIONS

The findings of the study derived from the data collected and analyzed with the results obtained. It was concluded that: some patients experienced glaucoma disease due to the fact that some members of their families suffers from the same condition which runs in their families and this contribute to the risk of glaucoma which experienced by patients attending glaucoma counselling health facility. Also, consumption of poor diet such as high intake of salt, coffee, red wine and chocolate accountable for the incidence of glaucoma disease among patients attending glaucoma counseling health facility. The researchers additionally concluded that the usage of unlawful and unprescribed drugs amplify the risk of glaucoma disease among patients attending glaucoma counselling health facility at Kwara State specialist hospital, Sobi, Ilorin.

Recommendations

There is need for health officers to enlighten the patients attending glaucoma counselling health facility on the benefits of advising their household's members particularly those above 30 years of age to undergo comprehensive eye dilation examination to forestall vision loss which cause through glaucoma disorder. It is essential for health educator to organize enlightenment programme through mass media that will educate the community members on danger involved in taking excess salt, red wine, black chocolate and coffee in diets to protect their eyes against glaucoma disease which is a silent killer of sight. The federal ministry of health should organize programme via

mass media that will educate Nigerians on the risk related with taking unlawful and unprescribed legal drugs to protect their eyes against glaucoma disease which is one of the main cause of blindness among people in our society.

Conflict of Interest

The authors declare no conflict of interest.

Authors' contributions

Ibrahim Ologele wrote the manuscript, edited the paper and checked the article for plagiarism, Basirat omolola Sulaiman formulated the questionnaire and administered the questionnaire. All the authors read and approved the final draft of the research.

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