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THE KNOWLEDGE OF EYECARE AND GLAUCOMA IN PATIENTS VISTING A UNIVERSITY EYE CLINIC

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Abstract

OBJECTIVES:

This research aims to determine the level of knowledge the public has on the importance of eye care and glaucoma. It also intends to examine the possible correlations between sociodemographics and the level of knowledge about eye care and glaucoma. Furthermore, the study aims to determine whether people who have a family history of glaucoma are more knowledgeable about the disease and the methods by which they are informed.

METHODS:

This cross-sectional study was conducted between December 2022 and May 2023. Data was gathered through a structured questionnaire comprised of the subject's socio-demographics and knowledge of eyecare and glaucoma. Data analysis was done using the Statistical Package for the Social Sciences program (SPSS). Associations between the socio-demographics and other details were tested using the Chi-square test, the Phi and Cramer test, and the Z-test for independent proportions.

RESULTS

Out of the total of 96 participants, 64.6% were aware of glaucoma. There was also a high level of knowledge of glaucoma with a significant correlation between gender and age ($p < 0.05$). There was also a strong correlation between those with a family history of glaucoma and awareness and knowledge. The optometrist was the most common source of information for participants in this study. Statistics showed a high level of knowledge on eyecare with 42.7% of the participants stating that the average individual should get an eye exam done every two years.

CONCLUSION

The knowledge of eye care and glaucoma was high, however, the study revealed insufficient knowledge in specific areas of glaucoma. As a result, more efforts are required to educate the public about this condition and prevent blindness caused by glaucoma through effective mechanisms.

1.0 Introduction

Glaucoma is the second leading cause of irreversible blindness in the world¹. Patients experience a progressive loss of peripheral vision because of the optic nerve's loss of ganglion cells and retinal axons². Glaucoma can be classified into various groups such as primary and secondary glaucoma. Primary glaucoma can be broken down into open-angle glaucoma and angle-closure glaucoma. Open-angle Glaucoma is the most common type, it is chronic but can be controlled while angle closure glaucoma is less common, acute and is a medical emergency.

Apart from open and closed-angle glaucoma, there is also ocular hypertension and normal tension glaucoma. Ocular hypertension is where there is a high intraocular pressure in the eyes (>21mm Hg) but there are no glaucomatous changes of the optic disc while normal tension glaucoma is where there are glaucomatous changes, but the intraocular pressure is within normal ranges (12-21 mm Hg)³. Usually intraocular pressures, structural damage to the optic nerve and visual field loss are all considered when assessing patients for glaucoma. Glaucoma affects an individual's peripheral vision causing "tunnel vision" and can even cause blindness if left untreated. Vision impairments such as glaucoma not only affect the individual but also the economy as it imposes a global productivity loss of an estimated US\$411 billion⁴.

According to estimates, there were 76 million glaucoma patients globally between the ages of 40 to 80 years in 2020 and was expected to increase in 2040 to 111.8 million⁵. In Trinidad and Tobago, Glaucoma is the leading cause of blindness in persons over 40, accounting for 31.7% of cases⁶. Results have shown in various studies that there is a lack of knowledge in the public about eye care. Most individuals may not even be able to state the difference between an optometrist and an ophthalmologist or identify the risk factors of eye disease⁷.

There has also been the misconception that having good vision would entail having no ocular health diseases which is false, especially for glaucoma. Therefore, individuals who are at risk for glaucoma neglect having frequent eye exams which prevents them from receiving an early diagnosis⁸.

2.0 Relevance to Public Health

The findings of this study will increase the public's knowledge and comprehension of glaucoma and eyecare. It will be beneficial to the participants, public health and community since steps can be implemented to further educate them and raise awareness of eye health and knowing how to prevent glaucoma-related vision loss. This study will also be a tool for further studies to be done in Trinidad and Tobago and, indirectly, the Caribbean, which will be beneficial in spreading awareness of this eye disease.

3.0 Statement of the Problem

Although many efforts have been made to manage glaucoma using drugs and laser therapy, the number of people who lose their vision because of glaucoma is still on the rise¹.

Numerous research has shown that the late detection of glaucoma is one of the main factors that lead to vision loss⁹. The high number of visual impairments arising from glaucoma raises concern about how much knowledge the public has on this topic. If there was greater knowledge on the importance of an eye exam, then frequent eye examinations would be conducted to obtain an early diagnosis and minimize its impact. This is one of the main reasons why we are conducting this research project. It will also allow us to determine how effectively clinicians are educating their patients on both eye care and glaucoma. We intend to conduct qualitative research through a retrospective approach to gain the patient's knowledge of eyecare and Glaucoma at a university eye clinic. We will gather the data by using a questionnaire developed by the researchers of this study. It will be used to determine how much effort is needed to share the awareness of glaucoma and design ways to spread information locally, regionally and globally especially allowing Trinidad and Tobago to determine where we stand in providing reliable information to the public.

4.0 Aim of study

To determine the knowledge of eyecare and Glaucoma in patients.

5.0 Objectives of the study

- 1) To determine the level of knowledge the public has on the importance of eye care and glaucoma.
- 2) To evaluate the correlation between sociodemographics and the amount of knowledge the public has on eyecare and glaucoma.
- 3) To ascertain methods by which the public is informed about Glaucoma and whether people with a family history are more informed than the rest of the public.

6.0 Research Questions or Hypotheses

This study hypothesises that the knowledge of eyecare and Glaucoma in patients visiting a university eye clinic is low.

7.0 Ethical approval

The UWI Ethics Committee granted ethical approval for this study on the 8th of November, 2022.

8.0 Literature Review

People are losing more and more of their vision worldwide, not just in the Caribbean, as ocular illnesses such as glaucoma, age-related macular degeneration and diabetic retinopathy are becoming more prevalent¹⁰. This is why recently; several academics have investigated the levels of knowledge of eyecare and glaucoma in different populations and countries¹¹.

According to the World Health Organization, there are 2.2 billion people with either a near or distance vision impairment with 7.7 million of those cases being due to glaucoma¹⁰. In addition to that, almost half a billion could have been prevented. One study found that in the UK the most widespread form of glaucoma was POAG which affects 2% of individuals over 40 years and 10% of those over 75 years are primarily people of African and Caribbean descent¹². PACG was less common, affecting 0.17% of people under 40 years and mainly people of East Indian descent¹³. Likewise, there was a strong correlation between age and glaucoma with older black adults at 15%. Glaucoma prevalence in males was found to be 36% higher than in females^{5, 14}. Additionally, individuals with diabetes and high blood pressure have a risk of developing glaucoma¹⁵.

To be aware of glaucoma can be defined as an individual knowing that the disease exists while knowledge of glaucoma can be defined as having information and understanding of the disease. In the “I can see fine” patient knowledge of eye care article, it was found that there were exceptional gaps in the knowledge of eye care and eye disease⁷. It should be noted that although this article discovered that knowledge of glaucoma was low, several empirical studies found that awareness of the condition was high¹.

Hence, although people may be aware that the condition exists, they do not fully comprehend what it is and how it affects them.

According to Irving, there are gaps in the knowledge of eyecare and sight risks⁷. The study highlighted that the participants had limited knowledge about the purpose of an eye exam and awareness of significant eye diseases. Several participants stated that the purpose of an eye exam was to check one's vision while only a few participants were aware that it is comprehensive and assesses the health of the eyes. Moreover, an eye exam for the average person should be done every two years while those with eye diseases should have an eye exam every year.

Moreover, various literature used an age range over 40^{1, 16}. Their evidence indicated that glaucoma awareness was high, whereas the literature that used an age range of 18 years and over found that the awareness levels were low. Another study that used an age range of 18 to 80 found that as the age increased there was a mild but not significant increase in awareness of diseases such as diabetic retinopathy and glaucoma¹⁷.

A 2016 study on the effects of gender found that women saw their primary care physician more often than men for mental and physical health difficulties¹⁸. Dunstan along with many other studies stated that females aged 16 to 60 were more likely to visit a doctor^{19, 20}.

Therefore, this can attest to the fact that in the past, quite a few literary works consisted of more females than males^{8, 16}. However, in recent studies, the reverse has been true^{11, 21, 22}. In a rural population, it was discovered that women were significantly less aware of glaucoma than men²³. In 2021, statistics showed that in Trinidad and Tobago, there were more females than males with 51.6% of females and 48.4% of males in the population²⁴.

Furthermore, approximately 50% of the participants in the Barbados Eye Studies diagnosed with open-angle glaucoma were unaware of the diagnosis²⁵. This article highlighted that those persons sought care mainly for glasses. Likewise, Saudi individuals had low levels of awareness and knowledge of glaucoma and only 18.8% had adequate knowledge of it².

Individuals who were aware of it were those who had either a personal or family history of glaucoma^{16, 22}. However, as the world's nations change quickly in terms of technology and access, new studies have changed this data with mass media being the top source, followed by family or friends who also have glaucoma and health professionals^{11, 23}.

According to the previously stated sources, there are gaps in the knowledge of eyecare, sight risk and glaucoma of individuals regionally and internationally. Only those with higher education levels were aware of eyecare and glaucoma^{1, 22, 26}. In Trinidad and Tobago, the undergraduate graduation rate for the academic year 2019–2020 was 24%, with 22% males and 25% females, according to a statistics article on education²⁷. However, the postgraduate graduation rate was 14% with 15% males and 13% females. In a study investigating the influence of education on health, it was found that adults with higher levels of education had better health and had regular health checks^{28, 29}. 81.6% of participants from the Human Resource for eye health, South Africa along with their management had adequate knowledge of eye health due to higher levels of education³⁰.

Though glaucoma has no cure, there are treatment options for glaucoma patients such as drops, laser treatments such as a trabeculoplasty and surgical options such as trabeculectomy and shunt tubes³¹. In a study done recently, it was found that most of the participants thought that glaucoma was untreatable or were unaware of the treatments available³².

9.0 Methodology

9.1 Study setting

Data was collected from the UWI Optometry Clinic in the Couva Hospital & Multi Training Facility, Preysal, Trinidad. Data collection took place at the clinic to easily obtain the knowledge of the patients. This data was collected by distributing questionnaires as single visit research from the period December 12th, 2022– January 24th, 2023.

9.2 Study Design

This research is a cross-sectional study design used to collect data from different patients at the UWI Optometry Clinic to be able to determine their knowledge of eyecare and glaucoma. The quantitative data collected was investigated primarily by both coinvestigators of this project. Convenience sampling was used based on the availability of patients and the survey method of data collection was also used by distributing questionnaires to 96 patients visiting the clinic.

Each questionnaire consisted of 19 multiple-choice questions and 4 open-ended questions. Patients anonymously completed the questionnaires and the results obtained were included in the analysis.

9.3 Study Population

The study population was 10,000 patients in Trinidad and Tobago.

9.4 Study Sample

Patients visiting the UWI Optometry Clinic in the Couva Hospital & Multi Training Facility.

9.5 Sample Size

The sample size used was 96. The sample size was found by using the Raosoft calculator. In the calculator, we used a 10% margin of error, a 95% confidence interval, 10000 as the population size and a 50% response distribution. It utilized the formula, $n = \frac{Z^2(c/100)^2 r(100-r)}{E^2}$. Where n is the sample size, E is the margin of error, N is the population size, r is the fraction of responses that we are concerned with, and $Z(c/100)$ is the critical value.

9.6 Sampling technique

Convenience sampling was used where patients were selected based on their availability. At UWI Optometry Clinic we asked patients who met the inclusion and exclusion criteria to participate in our research project by filling out our questionnaires.

We provided a brief background on our study and then explained to the subjects that there was no risk when taking part in the study and that strict confidentiality would always be intact. We also informed the participants that if they chose not to take part in the study that there were no repercussions for them.

9.7 Inclusion criteria

Any patient aged 18 years and over visiting the UWI Optometry Clinic in the Couva Hospital & Multi Training Facility.

9.8 Exclusion criteria

The exclusion criteria consisted of patients with diminished mental capacity and patients below the age of 18.

9.9 Data collection

- Patients at the UWI Optometry Clinic were approached and given a background on the research project by explaining that the project involved gathering information to determine the level of knowledge the population has on Eyecare and Glaucoma.
- They were then given a consent form to read and sign to ensure that they understand what was being asked of them.
- Next, they were given a questionnaire to complete.
- When the participant was finished, they returned the questionnaire to the co-investigators.

9.10 Data Analysis

All the acquired data was then entered into the SPSS program version 28.0.1.0 for analysis. Frequencies, the Chi-square test, the Phi and Cramer test, and the Z-test for independent proportions were used to generate statistical data. P values <0.05 were regarded as statistically significant for the chi-square test. The Phi and Cramer test was used to gauge the potency of any relationships that the p values might have shown with values of ≤ 0.2 being weak and strong relations by a value of ≥ 0.3 . The Z test was used to determine whether the test statistics' distribution was normal. Furthermore, for this research project, a high knowledge will be deduced if participants get questions 4,5,8,16,17 and 19 correct as well as if they select strongly agree/agree for questions 11 – 15. This study will also determine if there are significant differences in the knowledge of males and females. It will focus to fill in any gaps highlighted above as such a study has never been conducted in Trinidad and Tobago and by extension the Caribbean. It will aim to assess how well clinicians are educating both patients and determine how much more needs to be done. It will allow for the contribution of new knowledge that can be beneficial not only to this country but to future studies.

9.11 Data protection

The confidentiality of participants was protected as they were not required to provide their names, identifiers such as DOB, home addresses and telephone numbers. The questionnaires were filled out anonymously and only the data provided were used. All questionnaires were stored in a locked cabinet and data was stored in a password-protected laptop.

10.0 Results

Variables		Frequency n (%)
Gender	Female	54 (56.3)
	Male	42 (43.8)
	Total	96 (10.0)
Age (years)	18-22	1 (1.0)
	23-39	22 (22.9)
	40-49	31 (32.3)
	50-59	13 (13.5)
	60-69	19 (19.8)
	70->	10 (10.4)
Highest level of education	Primary	11 (11.5)
	Secondary	35 (36.5)
	University	50 (52.1)
	Total	96 (100.0)

Table 1 showing the socio-demographic characteristics of each participant at the UWI Optometry Clinic.

Variables		Frequency n (%)
When should the average person get an eye exam?	Yearly	38 (39.6)
	Every 2yrs	41 (42.7)
	Every 3yrs	6 (6.3)
	Every 5yrs	2 (2.1)
	When there is a problem with their vision	9 (9.4)
	Total	96 (100.0)
What is the purpose of an eye exam?	Check Eyesight	30 (32.3)
	Check Eye Health	29 (31.2)
	Check Eyesight & Eye Health	10 (10.8)
	Routine check	21 (22.6)
	Other	3 (3.2)
	Total	93(100.0)
When was your last eye exam?	1yr ago or <	45 (46.9)
	2yrs ago	18 (18.8)
	3yrs ago	13 (13.5)
	5yrs ago	17 (17.7)
	Never had an eye exam	3 (3.1)
	Total	96 (100.0)
Why would you visit an optometrist?	Check Vision	25 (26.6)
	Check Eye Health	15 (16.0)
	Check Rx	14 (14.9)
	Check Rx & Eye Health	1 (1.1)
	To have an eye exam	27 (28.6)
	Symptomatic	12 (12.8)
	Total	94 (100.0)
Do you wear glasses?	Yes	67(70.5)
	No	28 (29.5)
	Total	95(100.0)

Table 2 showing the knowledge of eyecare among participants.

Variables		Frequency n (%)
Glaucoma is usually accompanied by a rise in eye pressure	Strongly Agree	30 (31.3)
	Agree	31 (32.3)
	Not Sure	34 (35.4)
	Disagree	0.0 (0.0)
	Strongly Disagree	1 (1.0)
Glaucoma could lead to damage in the eyes	Strongly Agree	57 (59.4)
	Agree	33 (34.4)
	Not Sure	6 (6.3)
	Disagree	0.0 (0.0)
	Strongly Disagree	0.0 (0.0)
Glaucoma could lead to blindness	Strongly Agree	58 (60.4)
	Agree	25 (26.0)
	Not Sure	13 (13.5)
	Disagree	0.0 (0.0)
	Strongly Disagree	0.0 (0.0)
There may be no obvious symptoms at the start of glaucoma	Strongly Agree	15 (15.6)
	Agree	31 (32.3)
	Not Sure	39 (40.6)
	Disagree	9 (9.4)
	Strongly Disagree	2 (2.1)
I believe that all my family members should be tested for glaucoma	Strongly Agree	40 (41.7)
	Agree	45 (46.9)
	Not Sure	7 (7.3)
	Disagree	0.0 (0.0)
	Strongly Disagree	4 (4.2)
Vision lost from glaucoma can be restored	Strongly Agree	3 (3.1)
	Agree	14 (14.6)
	Not Sure	51 (53.1)
	Disagree	18 (18.8)
	Strongly Disagree	10 (10.4)
Glaucoma can be controlled	Strongly Agree	13 (13.5)
	Agree	55 (57.3)
	Not Sure	28 (29.2)
	Disagree	0.0 (0.0)
	Strongly Disagree	0.0 (0.0)
People at risk for glaucoma should have an eye exam through dilated pupils	Strongly Agree	23 (24.0)
	Agree	38 (39.6)
	Not Sure	34 (35.4)
	Disagree	1 (1.0)
	Strongly Disagree	0.0 (0.0)

Table 3 showing the participant's knowledge of glaucoma.

Variables		Frequency n (%)
Do you know what glaucoma is?	Yes	62 (64.6)
	No	34 (35.4)
	Total	96 (100.0)
Have you been diagnosed with glaucoma?	Yes	7 (7.4)
	No	88 (92.6)
	Total	95 (100.0)
Has anyone in your family been diagnosed with glaucoma?	Female	54 (56.3)
	Male	42 (43.8)
	Total	96 (100.0)

Table 4 showing the data for participants' awareness of glaucoma, diagnosis and family history of glaucoma.

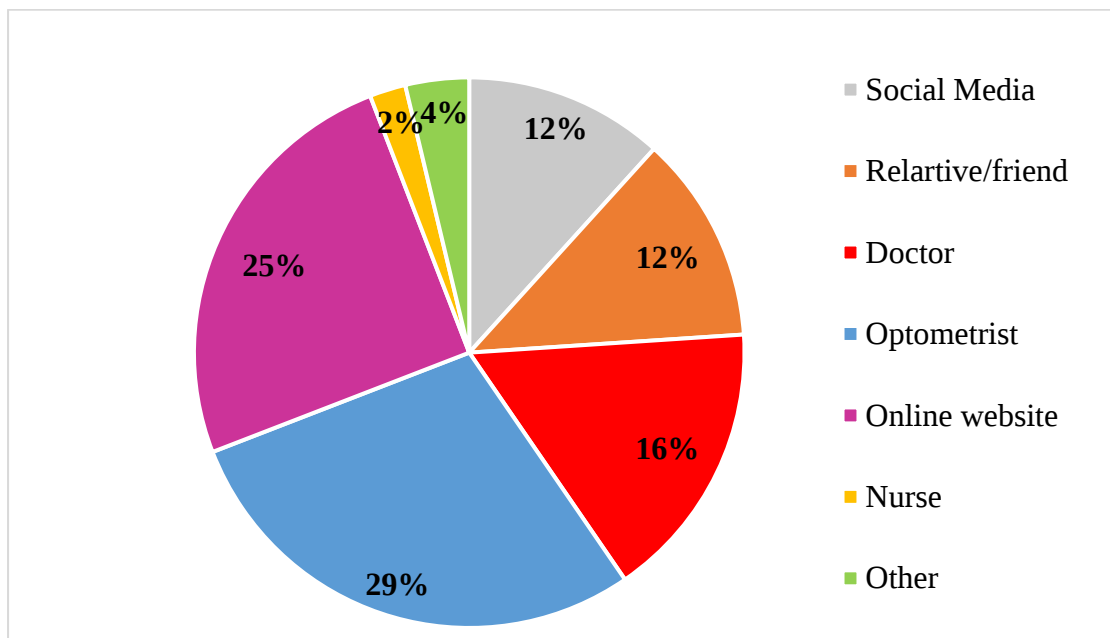


Figure 1 showing sources of glaucoma information.

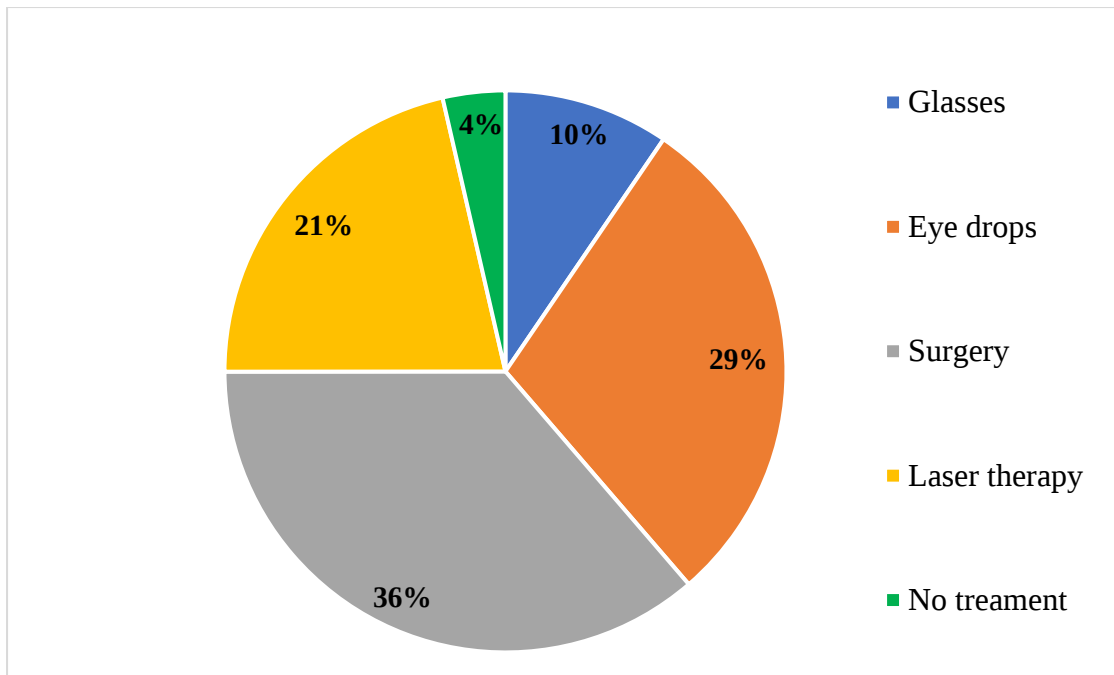


Figure 2 showing the participants' knowledge of the treatment options for glaucoma.

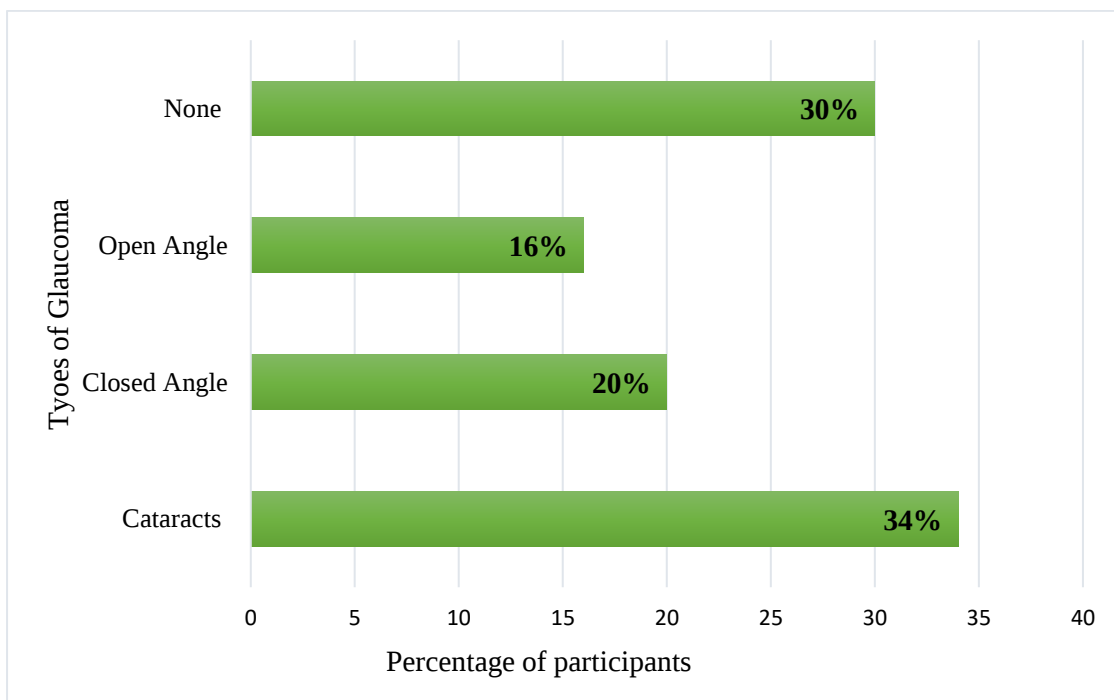


Figure 3 showing the participants' knowledge of the types of glaucoma.

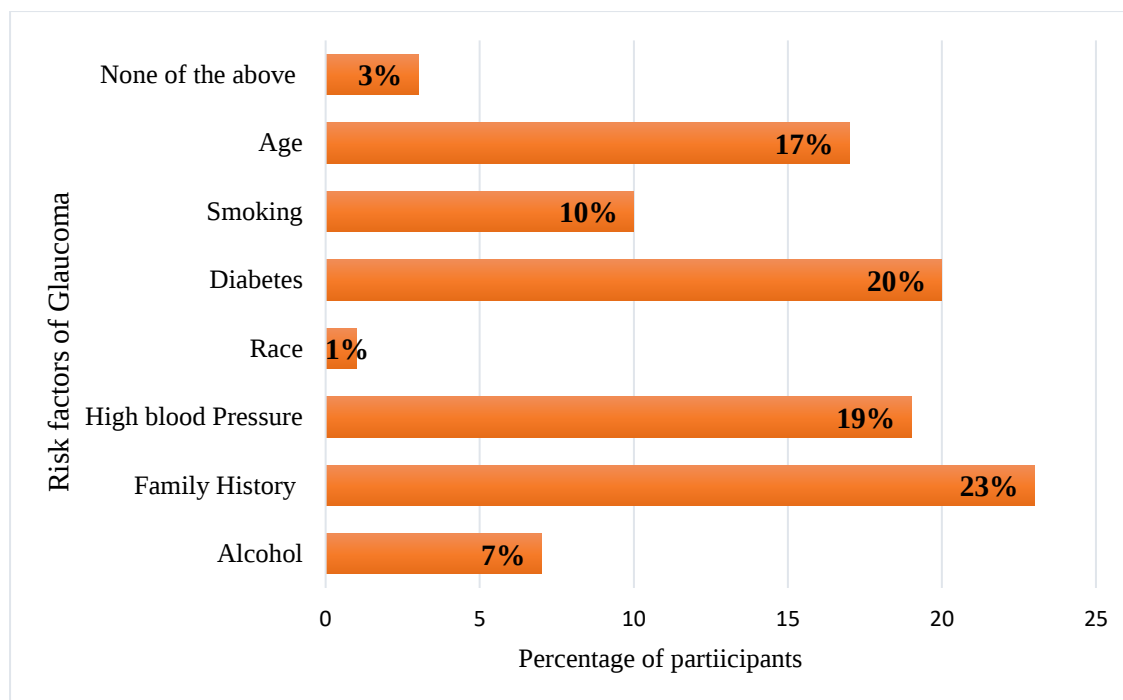


Figure 4 showing the participants' knowledge of the risk factors of glaucoma.

	Glaucoma is usually accompanied by a rise in eye pressure	Do you know what glaucoma is?	Glaucoma could lead to damage in the eyes	Glaucoma could lead to blindness	Glaucoma can be controlled	Vision lost from Glaucoma can be restored	No obvious symptoms at the start of Glaucoma	Exam through dilated pupils	Diagnosed with Glaucoma	Family History of Glaucoma
Gender	0.65	0.71	0.35	0.84	0.73	0.03	0.10	0.18	0.02	0.10
Age	0.605	0.05	0.60	0.25	0.72	0.52	0.03	0.82	0.06	0.54
Highest education level	0.22	0.68	0.07	0.74	0.78	0.40	0.48	0.87	0.89	0.70
Diagnosed with Glaucoma	0.04		0.02	0.10	0.06	0.01	0.01	0.19		
Family History of Glaucoma	0.09	0.04	0.29	0.08	0.21	0.03	0.51	0.08		

Table 5 Showing the chi-square probability scores for glaucoma related questions in the questionnaire.

	What is the purpose of an eye exam?	When should the average person get an eye exam?	When was the last time they had an eye exam?	Why would you visit an optometrist?
Gender	0.60	0.07	0.10	0.75
Age	0.95	0.34	0.37	0.72
Highest education level	0.26	0.84	0.26	0.93

Table 6 showing the chi-square probability scores for eyecare related questions from the questionnaire.

11.0 Discussion

There were ninety-six participants in this study which consisted of fifty-four females (56.3%) and forty-two males (43.8%). There were more females compared to males in this study which can be related to statistics, which showed that in Trinidad and Tobago, the population had more females (51.6%) than males (48.4%) in 2021²⁴.

In contrast to the hypothesis, the findings showed that there was a high level of knowledge of eye care. 32.3% (n=30/96) participants indicated that an eye exam was done to check eyesight while 31.2% (n=29/96) said that it is to check eye health. Additionally, 10.8% (n=10/96) of participants said that it was done to check eyesight and health. This is encouraging because eye exams are important to not only check vision but also the health of the eyes since good vision does not necessarily equal good eye health. In addition, 42.7% said that the average individual should get an eye exam every two years, and 28.6% said they would visit an optometrist for an eye exam (n=27/96). This contrasted with a Canadian study where many participants believed that the main reasons for visiting an Optometrist were for vision and to get their prescriptions¹.

Furthermore, there was a notable amount of the public who thought that eye exams were for people who have problems with their vision⁷. Although there was a high level of knowledge of eyecare in this research study, it should be noted that 12.8% (n=12/96) of the participants stated that they would visit an optometrist only if they were symptomatic. This is a widespread misperception that certain eye conditions may have no symptoms. The results also showed that there was no correlation between age or gender with knowledge of eye care. Additionally, there was a high awareness of glaucoma with 64.6% of the participants being aware which was similar to earlier studies¹.

This can be attributed to the fact that the study was conducted in a university eye clinic which can advise patients on their pre-existing eye conditions; thus, the participants would be expected to be more aware. There was also a strong correlation between those with a family history of glaucoma and awareness of glaucoma ($p \leq 0.05$). The Z test showed that individuals with a family history had a stronger relationship of knowing what glaucoma was, while there was no assurance that those who didn't have a family history would know about glaucoma. This was similar to a study done among Saudi individuals where participants with a family history were more aware and knowledgeable of glaucoma².

Findings from this study also showed that there was a strong correlation between a family history of glaucoma and knowledge of glaucoma. The participants with a family history of glaucoma had more knowledge. According to the Z test, those with a family history disagreed with the statement that vision loss from glaucoma could be restored while those without a family history were unsure.

In this study, age was also strongly associated with knowledge of glaucoma ($p \leq 0.05$). Data showed that those aged 40-49 had a greater knowledge. This contrasted with a study which found that age groups were not associated with the knowledge of glaucoma. However, glaucoma awareness did increase with the increasing age population as participants in the 60 – 79 years age group were more likely to be aware of glaucoma when compared to a younger age group¹⁶. There was also a strong correlation between gender and knowledge of glaucoma ($p=0.03$). The data showed that males had a lower knowledge than females as more males were not sure if vision loss from glaucoma could be restored. These results build on evidence of areas of glaucoma having low knowledge as described in earlier studies where only 18.8% of the participants had adequate knowledge of glaucoma².

According to the results, 29% of participants gained information from an Optometrist while 25% gained information from online websites contrary to other studies where mass media was the top source. This may be because this study was conducted in an eye clinic where an optometrist would provide information about eye diseases²³.

Furthermore, 23% of participants knew that family history is a risk factor for glaucoma but only 1% stated that race was a risk factor as previous studies show that Africans have a higher risk of developing glaucoma³³. Additionally, 34% of participants said that cataract was a type of glaucoma, showing that while general knowledge is good, there are still some areas where it is lacking.

Moreover, more than half of the population (52.1%) had a university education while 36.5% had a secondary education. This can be linked to the high knowledge of eyecare and glaucoma. This was similar to statistics in Trinidad, where the undergraduate graduation rate for 2019 – 2020 was 24% and the postgraduate graduation rate was 14% ²¹. In addition to this, patients could have had prior knowledge of eye diseases as they were at a university eye clinic, or the participants could have simply guessed their answers.

This study shows unequivocally that there is a high awareness and knowledge of both eyecare and glaucoma in Trinidad and Tobago, but it also highlighted that there is still a need for more education to be done.

12.0 Limitations of Methodology

Some limitations of this study are:

- There was a lack of literature on the knowledge of eyecare and glaucoma regionally and locally since this research study was not conducted in the Caribbean previously.
- This study's findings may only apply to the patient population of the UWI Optometry Clinic and may contradict the characteristics of patients belonging to other eye clinics across Trinidad and Tobago.
- The reliability of patient responses may be questionable as there was no method of ensuring complete honesty and transparency.
- Inaccurate patient responses may have been obtained due to response bias.

13.0 Conclusions

In conclusion, it was found that there were high levels of knowledge of eyecare and glaucoma by the public with 31.2% of the participants indicating that an eye exam was to check the health of the eyes and 10.8% stating that it was for checking eyesight and health. 64.6% were aware of glaucoma and they were also knowledgeable with 63.6% knowing that glaucoma is accompanied by a rise in eye pressure. There were no statistically significant correlations between sociodemographic and knowledge of eye care. However, there were statistically significant correlations between awareness and knowledge of glaucoma and gender and age. It was also found that the public gained their information from their optometrist (29%) and online (25%). Lastly, it was determined that individuals with a family history of glaucoma were more informed than the rest of the public.

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14.0 Recommendations

This study revealed a high level of knowledge of eyecare and glaucoma among patients visiting a university eye clinic. Hence, the following recommendations are presented:

- This study should be replicated in a mall in Trinidad and Tobago to obtain more generalisability of the results since the patients visiting the clinic were expected to have more awareness of eye diseases.
- This study should be repeated with a larger amount of glaucoma patients to be able to better determine their knowledge of glaucoma.

15.0 Next Steps / Dissemination of findings

- This research study will be published in a peer-reviewed journal.
- Create posters that would educate the public.
- Inform the Health Authorities about the findings so that they can raise awareness and educate the population about glaucoma.

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17.0 Appendices

CONSENT FORM

Application number: CREC-SA.1857/

1. TITLE OF RESEARCH: The knowledge of eyecare and Glaucoma in patients visiting a university eye clinic
2. INVESTIGATOR: Niall Farnon, Miriam Brown and Mieko Noel
3. For this study, you will be completing a short survey about eyecare and how much you may know about glaucoma.
4. If you have any questions before you complete this survey, please contact us, Niall.Farnon@sta.uwi.edu , miriam.brown1@my.uwi.edu and mieko.noel@uwi.edu
5. All responses you provide for this study will be completely confidential. When the results of the study are reported, you will not be identified by name or any other information that could be used to infer your identity.
6. By ticking “Yes” below, you acknowledge that you have read and understood that:
 - o Your participation in this survey is voluntary. You may withdraw your consent and discontinue participation in the project at any time. Your refusal to participate will not in any way adversely impact upon you.
 - o You have given consent to be a subject of this research and respond to the survey / questionnaire(s) as truly as possible

o You do not waive any legal rights or release the University or the investigator from liability for negligence or misconduct.

7. Do you wish to participate in this study?

- Yes, I am consenting to participate
- No, I am NOT consenting to participate

.....

Signature

Name

Date

Participation Number:

1. What is your gender?

☐ Male

☐ Female

2. What is your age group?

☐ 18 - 22

☐ 23 – 39

☐ 40 - 49

☐ 50 – 59

☐ 60 – 69

☐ 70 or over

3. What is your highest education level?

☐ Primary school

☐ Secondary school

☐ University level

4. What is the purpose of an eye exam?

5. When should the average person get an eye exam done?

- ☐ Yearly
- ☐ Every 2 years
- ☐ Every 3 years
- ☐ Every 5 years
- ☐ When there is a problem with their vision

6. When was the last time you had an eye exam?

- ☐ 1 year ago, or less
- ☐ 2 years ago
- ☐ 3 years ago
- ☐ 5 years ago
- ☐ I have never had an eye exam

7. Do you wear glasses?

- ☐ Yes
- ☐ No

8. Why would you visit an optometrist?

9. Do you know what glaucoma is?

☐ Yes

☐ No

10. How do you get information about glaucoma? (you can tick more than one answer)

☐ Social media (Facebook/ Instagram/WhatsApp etc)

☐ Relative/friend who has glaucoma

☐ Doctor

☐ Optometrist

☐ Online websites

☐ Nurse

☐ Other: specify

Question	Response				
	Strongly Agree	Agree	Not sure	Disagree	Strongly Disagree
11. Glaucoma is usually accompanied by a rise in eye pressure	☐	☐	☐	☐	☐
12. Glaucoma could lead to damage in the eyes	☐	☐	☐	☐	☐
13. Glaucoma could lead to blindness	☐	☐	☐	☐	☐
14. There may be no obvious symptoms at the start of the glaucoma	☐	☐	☐	☐	☐
15. I believe that all my family members should be tested for glaucoma	☐	☐	☐	☐	☐
16. Vision lost from glaucoma can be restored	☐	☐	☐	☐	☐
17. Glaucoma can be controlled	☐	☐	☐	☐	☐
18. People at risk for glaucoma should have an eye examination through dilated pupils.	☐	☐	☐	☐	☐

19. What are the types of glaucoma? (you can tick more than one answer)

☐ Cataract

☐ Closed angle

☐ Open angle

☐ None of the above

20. What are the risk factors of glaucoma? (you can tick more than one answer)

- ☐ Alcohol
- ☐ Family history of glaucoma
- ☐ High blood pressure
- ☐ Race
- ☐ Diabetes
- ☐ Smoking
- ☐ Age
- ☐ None of the above

21. What are the treatments for glaucoma? (you can choose more than one answer)

- ☐ Glasses
- ☐ Eye drops
- ☐ Surgery
- ☐ Laser therapy
- ☐ No treatment

22. Have you been diagnosed with glaucoma? If yes, how long have you been diagnosed with it?

23. Has anyone in your family been diagnosed with glaucoma? If yes, please state your relationship with that person.
