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DEPARTMENT OF CLNICAL SURGICAL SCIENCES

OPTOMETRY UNIT

TITILE OF STUDY:

"Knowledge, Attitude, and preference towards the management of myopia among patients in Trinidad with UWI students."

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1.0 ABSTRACT

OBJECTIVE:

To investigate knowledge, attitudes, and preferences of patients in Trinidad towards myopia management with those of UWI students.

METHOD:

This study was a Cross-Sectional Observational Study which tested the knowledge, attitudes and preferences towards myopia management through an online questionnaire. This study targeted patients who were myopes. University students (UWI).

RESULTS:

A total of 317 patients and students were enrolled in this study with 114 being males (36.0%) and 203 being females (64.0%). Their ages ranged from 18-35 years with 40.4% of participants being between ages 18-21, 21.8% between 22-25, 16.1% between ages 26-30 and 21.8% between ages 30-35. In the assessment of knowledge there was a mean score of 12.31 ± 4.20 which indicated there was a poor total knowledge score amongst participants regarding myopia management. For the assessment of attitudes there was a total mean score of 21.64 ± 3.30 indicating that patients had a good attitude towards myopia management as well as spectacles (45.4%) and soft contact lenses (41.4%) were the most preferred treatment for myopia management.

CONCLUSION:

To conclude, from conducting this study, there is a lack of awareness of myopia management in Trinidad and hence, measures need to be taken in order spread knowledge on myopia.

2.0 INTRODUCTION

Myopia is a common refractive error that affects a large fraction of the population worldwide (1). It can be recognized as a major health issue which can cause significant visual loss and also risk factors to other ocular conditions (2). The global prevalence of myopia is estimated to be around 28.3% of the population (3), hence it's denoted that the prevalence of myopia is known to be increasing globally and therefore, this will soon affect half the world's population by 2050 (4). Consequently, this shows an urgent need for new managements to be put in place in order to address the growing public health concerns. Hence, it is important to understand the patient's knowledge, attitude, and preference towards the management of myopia as this can help healthcare professionals develop proper management plans which can be widely accepted by the patients so that they may be more compliant. Therefore, this study aims to investigate the difference in knowledge, attitude and preference towards myopia management amongst patients in Trinidad as well as UWI students to identify areas for improvement for myopia management and educate those who have never heard about it. This study will hence be able to influence the development of more effective myopia management strategies which would be customized to suit the needs and preferences of the patients in Trinidad as well as the wider Caribbean region, by having such implementations in place we would be able to battle to ongoing prevalence of myopia and hence lead to the impact of change on myopia management as its of high priority.

3.0 RELEVANCE TO PUBLIC HEALTH:

This project will aid in research development of Myopia management in Trinidad. The data collected in this study will help in spreading awareness of where myopia can be managed and put strategies in place in order to help those who have myopia due to there already being a high prevalence of myopia in the country and worldwide. This also helps raise the image of myopia management as it's quite overlooked in many countries including our own and show how important myopia management is. Hence, this study can act like a tool which will help benefit future research that can be done on myopia management as well as the knowledge, attitude and preference towards myopia management.

4.0 PROBLEM STATEMENT:

Myopia is a known eye disorder that is typically prevalent in Trinidad. The prevalence of myopia is increasing over time and there is a spike in myopia amongst young people. Hence, proper management of myopia must be put into place as its crucial to delay or even prevent the progression as well as reduce the risk of developing ocular complications that are associated with myopia (5). Though, in previous studies it displayed that there are gaps in the knowledge and implementation of practices when it comes to myopia management among the general population which includes patients and healthcare professionals. Therefore, its vital to understand both patients' and healthcare professionals' knowledge, attitudes and preference with respect to myopia management to identify the gaps and develop a directed public health intervention which allows the improvement of myopia management in Trinidad. Furthermore, comparing the knowledge, attitude, and preference towards myopia management between patients and students, allows us to have an insight into the factors which can influence the preferences as well as help develop more constructive strategies in order to address the problems encountered as well as provide efficient care to persons with myopia in Trinidad. Hence, due to the lack of research on the knowledge of myopia management as well as practices in Trinidad among the patients, there is a major gap in knowledge that needs to be addressed to improve myopia management in Trinidad. Therefore, this study aims to assess the knowledge, attitude, and preference towards myopia management among patients in Trinidad as well as UWI students to identify if there are any differences and implement effective strategies in order to manage myopia in Trinidad.

5.0 AIM:

To determine the knowledge, attitude, and preference toward the management of myopia amongst patients in Trinidad

6.0 OBJECTIVES:

1. To assess the level of knowledge among patients in Trinidad regarding myopia, including its causes, symptoms, and management options.
2. To determine the attitudes of patients towards myopia management, including their beliefs and perceptions about various treatment options.
3. To identify the preferred treatment methods for myopia management among patients in Trinidad.

7.0 RESEARCH QUESTIONS:

1. What is the level of knowledge among patients in Trinidad and UWI students, regarding myopia and its management?

2. What are the attitudes towards myopia management, and how do they vary among different groups?

3. What are the preferred treatment options for myopia management among different groups?

8.0 ETHICAL APPROVAL/ CONSIDERATIONS

The research proposal was submitted to the research ethics committee in order to get approval to start our data collection for the study. It was successfully submitted to the ethics committee upon receiving approval on 10th October 2022, the reference number for our group is CREC-SA.1806/10/2022.

9.0 LITERATURE REVIEW:

Myopia, also known as nearsightedness, is a common eye disorder that affects individuals of all ages and races. When the axial length of the eye is too long it causes the light entering the eye to focus in front of the retina instead of directly on it, hence causing a refractive error (1). Due to the widespread of myopia, there is an increase worldwide, particularly in Southeast and East Asia. It is now a serious concern to the public health as it's associated with various eye-related complications, such as glaucoma, retinal detachment and cataract (6). In Asia, there is roughly around 1.9 million hence, 28.3% of the population globally with mild to moderate myopia and around 4.0% of the population globally with high myopia (7). There is a possibility that in the future there can be an epidemic of myopia.

It can be expected in Non-rural Asian cities as research has shown that the widespread of myopia in Asia is much higher than in Western communities with the prevalence being as high as 70% in Singapore, 50% in Taiwan, and 40% in Japan (8). A study conducted by Seet B. et al, found that the prevalence of myopia in Singapore is one of the highest worldwide, with a prevalence exceeding 70% in young adults who finished tertiary education and 40% in Chinese adult population. Additionally, the study showed that social demographics also play a part in the increase of myopia in these populations, especially in young adults. This included higher income, occupations associated with a lot of near-work and higher education (9). This indicates that there will be a higher myopia prevalence of approximately 83% which will take place in all the age groups in the near future, as the current young generation with the highest myopia rate will be older in the years to come.

In another study, however, conducted by Pan et al, myopia was found to be the most prevalent within Asia, amongst Koreans aged 19 years. It was also prevalent in those older than 70 years, compared to other age groups within Asia which revealed nuclear cataract-myopia shifts in refraction (8). In Trinidad, the prevalence of myopia has been increasing over time, with a reported prevalence of 21.5% among school children and 46% among university students. Risk factors of myopia included age, increasing years of education, and race, specifically those of African descent.

Proper management of myopia is crucial to prevent or delay its progression and minimize the risk of developing associated ocular complications. Management options include optical correction (such as glasses and contact lenses), pharmacological treatments, and lifestyle modifications. Previous studies have shown that there are age gaps in knowledge and practices regarding myopia management among the general population, including patients and healthcare professionals (10). However, factors that have been identified to influence myopia management preferences include age, gender, education level, socioeconomic status and cultural beliefs (11).

Several studies have been done worldwide, including China, Singapore and the United States, in assessing the knowledge and practices regarding myopia management among healthcare professionals and the general population (12). But there is a lack of research on myopia management, knowledge and practices in Trinidad, particularly among patients and healthcare professionals.

Therefore, this study aims to address this gap by assessing the knowledge, attitude and preferences towards myopia management amongst patients in Trinidad, with university students in order to contribute to the development of targeted public health interventions to improve myopia management in Trinidad.

10.0 METHODOLOGY:

This research evaluated the knowledge, attitudes, and preference towards myopia management amongst patients and university students in Trinidad. From the data collected in this study, it was hoped that we would obtain a proper understanding as to how much people knew about myopia management. Our study also aimed to ascertain change where strategies can be put in place to help those who have myopia in Trinidad and spread awareness of the matter. Hence, this section deals with the methods used to collect data. This section also deals with the steps taken to achieve confidentiality and how the data was analyzed.

Study Setting:

This study was conducted in Trinidad and Tobago. Trinidad is part of the twin islands called Trinidad and Tobago with a population of approximately 1.4 million as of 2019. It has a variety of ethnic groups such as Africans, East Indians, Caucasian, Mixed, as well as other ethnicities (13). The data collection for this study took place in the public as well as the Couva Multi-Training Facility.

Study Design:

This research project was a Cross-Sectional Observational Study. With this type of study, a group of participants - being the adult population in Trinidad between ages 18 to 35 - were examined and the information and data that already exists regarding the attitudes, knowledge, and preference on myopia management were depicted without the manipulation of any variables or interference with the environment.

Study Population:

The study mainly focused on the adult population from 18 - 35 years of age, this applies to patients who have visited the clinic in the past and the present who have myopia. Additionally, there was a selection of university students to determine the knowledge, attitude and preference towards myopia management.

Study Sample:

The sample technique used was a non - probability sampling, which is not a randomized selection of the population. This allowed us to obtain two groups of participants wanted for the study. Group one consists of patients while group two consists of UWI students. However, they both partook in the same questionnaire.

Sample Size:

The sample size was found using Epitools software which was developed by a company called Ausvet. The estimated proportion was found to be 0.3 with a desired precision of an estimate of 0.05. The confidence level used was 0.95 and the population size for the sample was 270,000. Hence, the sample size was found to be 323.

Inclusion/ Exclusion Criteria:

The Inclusion criteria was as follows: Participants must be able and willing to provide valid and informed consent to the questionnaires carried out and must be between the ages of 18-40 years. Patients of the UWI Optometry Clinic who were diagnosed with myopia and students who are currently enrolled in university.

The Exclusion criteria was as follows: Persons who did refractive surgery, university students who are not Trinidad Nationals or Eyecare professionals who are not involved in myopia management or do not have much experience in myopia management were not able to participate in this research.

Data Collection Tools:

There were two questionnaires used. The first questionnaire was for patients and students (14). This questionnaire consisted of four (4) sections which included demographics, knowledge, attitude and preference. In total there were nineteen (19) questions.

Data Collection:

The data collected was done by using one questionnaire. The questionnaire was done for patients/university students and was conducted via telephone calls and face-to-face.

Patients & University students:

The patients were interviewed via telephone, and oral responses were recorded by the student researcher. To obtain the participants' phone numbers, a letter was written to the head of the unit requesting permission to access patient record files in the Couva Multi-training Facility. We searched patient files from A to Z to identify patients who met the criteria of our study. This included, being a myope of 0.5D and over and age of 18-35. Some participants were unavailable when we initially tried to contact them, so we tried again 30 minutes later or another day. The university students received the questionnaires via the Marketing & Communications office of UWI where a link to the questionnaire was attached. The questionnaire was answered anonymously and responses were documented by a student researcher.

Data Analysis:

The data collected was analyzed using IBM SPSS statistics software version 29. This analyzed both descriptive and inferential tests to assess each objective of the study.

Descriptive statistics such as standard deviation, standard range and mean were done to gain information on the frequencies and percentages as well as measures of central tendency regarding the knowledge, attitudes, preferences and barriers to myopia management in Trinidad.

An analysis of variance, or ANOVA test, and T-tests, which are both inferential statistical tests, were done to determine whether there were significant differences in the knowledge, attitudes, preferences, and perceived barriers to myopia management among UWI students and patients in Trinidad.

Data Protection:

The identities of all participants were kept anonymous throughout the study and confidentiality was kept. This was done as it was an online questionnaire where a link was sent out to obtain responses from patients, students and professionals. All data was kept in a secure database where only the principal investigator and co-investigators were able to access . The database was retained on a computer that was password protected, where the principal investigator had control of. Furthermore, to ensure all data collected was kept anonymous, their names nor addresses were not recorded.

11.0 RESULTS:

Age, Gender, Ethnicity Distribution:

A total number of 317 patients and students were enrolled in this study; 114 males (36.0%) and 203 females (64.0%). Their ages ranged from 18-35 years with 40.4% of participants being between ages 18-21, 21.8% between ages 22-25, 16.1% between ages 26-30 and 21.8% between ages 30-35. There were 4 different ethnic groups were found, African (23.0%), East Indian (44.5%), Mixed (30.6%) and other (1.9%). (Table 1.0)

Variables	Frequency *(n)*	Percentage (%)
Age		
18-21	128	40.4%
22-25	69	21.8%
26-30	51	16.1%
30-35	69	21.8%
Gender		
Male	114	36.0%
Female	203	64.0%
Ethnicity		
African	73	23.0%
East Indian	141	44.5%
Mixed	97	30.6%
Other	6	1.9%

Table 1.0: Showing Demographic data for Patients and Students.

Knowledge Assessment for Patients and University Students:

From the table below, A good Total knowledge score represent 60% of more of that possible 25, hence from 15 would be a proper knowledge score.

Less than 15 is considered a poor Total Knowledge score.

		Gender		**Age**				**Total Score** (Mean ± SD)
		Male	Female	18-21	22-25	26-30	30-35	
Mean Knowledge Score (Mean ± SD)		11.80	12.60	12.45	12.30	12.12	12.20	12.31 ± 4.20
***p*-value (Difference in means)**		*0.052*		*0.963*				
Knowledge Rank	Poor	66	94	61	37	26	36	
	Good	48	109	67	32	25	33	
***p*-value (Chi-Square)**		***0.048****		*0.858*				

Table 2.0 Showing Knowledge Assessment for University students and Patients

ANOVA Test for Knowledge Assessment for participants

The ANOVA is used to determine the difference between groups. The post hoc LCD test indicates that the category 26-30 was lower than the other age groups. (Table 2.1)

ANOVA

Total Knowledge

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	5.024	3	1.675	0.094	0.963
Within Groups	5560.679	313	17.766		
Total	5565.703	316			

Table 2.1 showing ANOVA test done for Knowledge Assessment of patient and University students.

Table 2.2 showing Multiple Comparisons for Knowledge Assessment of patient and University

Multiple Comparisons

Dependent Variable:

LSD

(I) Age		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18-22	22-26	**-.42640***	0.17053	0.013	-0.7619	-0.0909
	26-30	-0.22947	0.18907	0.226	-0.6015	0.1425
	30-35	**-.41191***	0.17053	0.016	-0.7474	-0.0764
22-26	18-22	**.42640***	0.17053	0.013	0.0909	0.7619
	26-30	0.19693	0.21085	0.351	-0.2179	0.6118
	30-35	0.01449	0.19439	0.941	-0.3680	0.3970
26-30	18-22	0.22947	0.18907	0.226	-0.1425	0.6015
	22-26	-0.19693	0.21085	0.351	-0.6118	0.2179
	30-35	-0.18244	0.21085	0.388	-0.5973	0.2324
30-35	18-22	**.41191***	0.17053	0.016	0.0764	0.7474
	22-26	-0.01449	0.19439	0.941	-0.3970	0.3680
	26-30	0.18244	0.21085	0.388	-0.2324	0.5973

*. The mean difference is significant at the 0.05 level.

Attitudes for Patients and University Students:

From the table below, the total possible Attitude score is 30.

Again, we classify a good score as 60% or more so from 18 is considered good and lower than 18 poor attitude.

			Gender		Age				Total Score (Mean ± SD)
			Male	Female	18-21	22-25	26-30	30-35	
Attitude	**Mean Attitude Score**		21.45	21.74	20.97	21.52	22.51	22.35	21.64 ± 3.30
	***p*-value (Difference in means)**		*0.052*			***0.007****			
	Knowledge Rank	Poor	13	7	5	4	7	4	
		Good	101	196	123	65	44	65	
	***p*-value (Chi-Square)**		***0.005******			*0.109*			

Table 3.0 Showing attitudes for patients and university students on myopia management.

Table 3.1 indicates that the

ANOVA					
TOTALATTITUDE					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	131.791	3	43.930	4.142	0.007
Within Groups	3319.490	313	10.605		
Total	3451.281	316			

Table 3.1 Showing ANOVA assessment for Attitudes.

Value in table 3.2 stating the highest frequency as n=202

Attitude Score	Frequency (n)	Percent (%)
0	4	1.3
1	11	3.5
2	29	9.1
3	71	22.4
4	202	63.7

Table 3.2 Showing Frequency of the Attitudes for Patients and Students

Table 3.5 Shows Weighted Total Score for attitude, the mean total score was found to be 2.68 ± 0.53. The ***p*-value** 0.391% was found for Gender while 0.109% was found for age.

Weighted Total Score			**Gender**		**Age**				**Total Score** (Mean ± SD)
			Male	Female	18-21	22-25	26-30	30-35	
	Mean Attitude Score		2.62	2.71	2.64	2.67	2.72	2.71	2.68 ± 0.53
	***p*-value (Difference in means)**		*0.069*			*0.730*			
	Weighted Total Rank	Poor	64	91	63	39	21	32	
		Good	50	112	65	30	30	32	
	***p*-value (Chi-Square)**		*0.391*			*0.109*			

Table 3.5 Showing Weighted Total Score for attitude

Table 3.6 showing, Total Weighted score is significant as its <5%

ANOVA

TotalWeightedScore

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.371	3	0.124	0.432	0.730
Within Groups	89.676	313	0.287		
Total	90.047	316			

Table 3.6 Showing ANOVA Weighted Score for Attitude

Values show, weighted score.

	Knowledge	Attitude	
Total Score	25	30	55
Mean	4.16667	5	9.16667
Weighted (60% Knowledge vs 40% Attitude)	2.5	2	4.5
Good Weighted Score	2.7 to 4.5		
Poor Weighted Score	0 to 2.69		

Table 3.7 Showing Weighted Score for 60% Knowledge vs 40% Attitude.

Table 4.0, where the value closer to +1 indicates a strong positive linear relationship, while the values close to -1 indicates a strong negative linear relationship. Values close to 0 represent a weak linear relationship

		Age	Gender	Which option do you think would work best for preventing the progression of myopia?	Would you be interested in myopia management over traditional optical corrections?	If you have myopia, which of the following do you currently use to correct it?	Which of the following methods of myopia management would you prefer the most as your choice of 9.5?
Age	Correlation Coefficient	1.000	-0.022	0.045	-0.042	**.135***	0.044
	Sig. (2-tailed)		0.692	0.429	0.457	0.016	0.472
	N	317	317	317	317	317	317
Gender	Correlation Coefficient	-0.022	1.000	-0.036	-0.001	-0.017	0.044
	Sig. (2-tailed)	0.692		0.520	0.993	0.764	0.467
	N	317	317	317	317	317	317
Which option do you think would work best for preventing the progression of myopia?	Correlation Coefficient	0.045	-0.036	1.000	0.033	**.154****	0.084
	Sig. (2-tailed)	0.429	0.520		0.563	0.006	0.168
	N	317	317	317	317	317	317
Would you be interested in myopia management over traditional optical corrections?	Correlation Coefficient	-0.042	-0.001	0.033	1.000	**.144***	0.017
	Sig. (2-tailed)	0.457	0.993	0.563		0.010	0.785
	N	317	317	317	317	317	317
If you have myopia, which of the following do you currently use to correct it?	Correlation Coefficient	**.135***	-0.017	**.154****	**.144***	1.000	-0.007
	Sig. (2-tailed)	0.016	0.764	0.006	0.010		0.905
	N	317	317	317	317	317	317
Which of the following methods of myopia management would you prefer the most as your choice of 9.5?	Correlation Coefficient	0.044	0.044	0.084	0.017	-0.007	1.000
	Sig. (2-tailed)	0.472	0.467	0.168	0.785	0.905	
	N	317	317	317	317	317	317

Table 4.0 Showing correlation between Gender and Age for preferences.

Value from Table 4.1 show that the results were significant as its <5%.

ANOVA					
PreferenceScore					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.812	3	0.937	3.906	0.009
Within Groups	75.112	313	0.240		
Total	77.924	316			

Table 4.1 Showing ANOVA assessment for Preference.

Table 4.2, shows LSD statistics.

Multiple Comparisons

Dependent Variable:
LSD

(I) Age		Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18-22	22-26	-0.01846	0.07316	0.801	-0.1624	0.1255
	26-30	.21002*	0.08112	0.010	0.0504	0.3696
	30-35	-0.09092	0.07316	0.215	-0.2349	0.0530
22-26	18-22	0.01846	0.07316	0.801	-0.1255	0.1624
	26-30	.22847*	0.09046	0.012	0.0505	0.4065
	30-35	-0.07246	0.08340	0.386	-0.2366	0.0916
26-30	18-22	-.21002*	0.08112	0.010	-0.3696	-0.0504
	22-26	-.22847*	0.09046	0.012	-0.4065	-0.0505
	30-35	-.30094*	0.09046	0.001	-0.4789	-0.1229
30-35	18-22	0.09092	0.07316	0.215	-0.0530	0.2349
	22-26	0.07246	0.08340	0.386	-0.0916	0.2366
	26-30	.30094*	0.09046	0.001	0.1229	0.4789

*. The mean difference is significant at the 0.05 level.

Table 4.2 Showing Multiple comparisons.

From Table 5.0 its seen that the *p* value is significant as the value is 0.006 which is <0.05%

Variable		Negative Attitude	Positive Attitude	Chi-square Test of Association (*p*-value)
Age	18-22	17	111	0.638
	22-26	7	62	
	26-30	8	43	
	30-35	12	57	
Gender	Male	24	90	**0.006***
	Female	20	183	

Table 5.0 Showing Association between Gender and Attitude category.

From Table 5.1, it indicated that the *p* value is significant as its 0.043 which is <0.05%

Variable		Poor Knowledge	Good Knowledge	Excellent Knowledge	Chi-square Test of Association (*p*-value)
Age	18-22	77	35	16	**0.043***
	22-26	35	26	8	
	26-30	39	9	3	
	30-35	33	28	8	
Gender	Male	61	38	15	0.43
	Female	123	60	20	

Table 5.1 Showing Association between Knowledge and Age category.

Table 5.2 indicates that the *p* value is significant as its 0.010 which is <0.05%

Variable		Bad preference	Good preference	Chi-square Test of Association (*p*-value)
Age	18-22	71	57	**0.010***
	22-26	37	32	
	26-30	39	12	
	30-35	32	37	
Gender	Male	65	49	0.882
	Female	114	89	

Table 5.2 Showing Association between Preference and Age category.

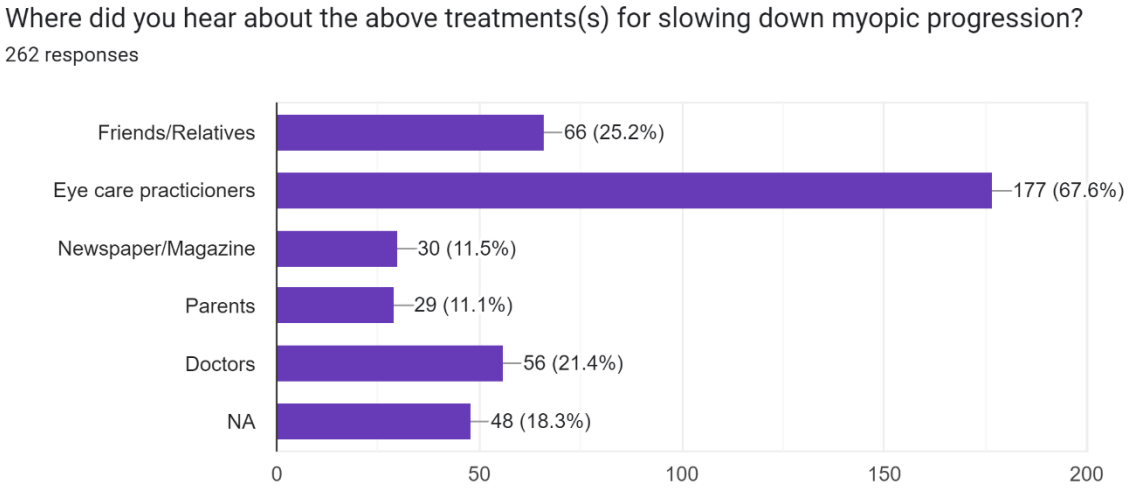

Figure 6.0 showing a Bar Graph depicting the responses of where the participants heard about myopia management treatments

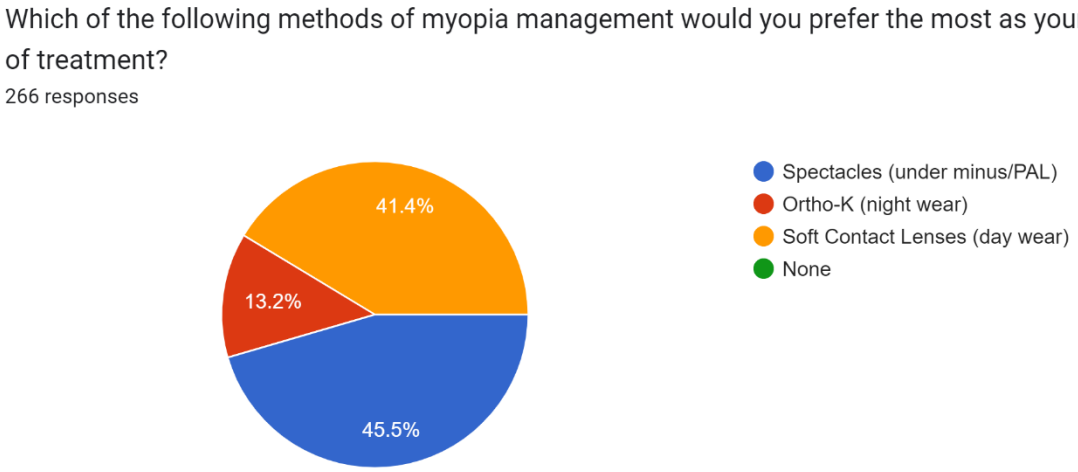

Figure 7.0 Showing the participants preferred treatment for myopia management

12.0 DISCUSSION:

This dialogue discusses the results presented as it relates to the study objectives and research questions. A total of 317 patients and students were enrolled in this study with 114 being males (36.0%) and 203 being females (64.0%). Their ages ranged from 18-35 years with 40.4% of participants being between ages 18-21, 21.8% between 22-25, 16.1% between ages 26-30 and 21.8% between ages 30-35. Hence, the inclusion criteria enrolled in this study was satisfied.

Knowledge is a crucial factor in myopia management as it enables individuals to make informed decisions about their eye health. Patients need to understand the causes and consequences of myopia, as well as the available treatment options. This knowledge can come from various sources such as healthcare professionals, online resources, and social networks. Healthcare professionals can provide information on the different types of myopia management, their benefits and risks, and help patients choose the most suitable option. From the results obtained in Table 2.0, it can be denoted that there is a poor knowledge rank amongst genders and ages as the mean knowledge score is <15 and the total mean score is 12.31. This indicates that among the participants there is a lack of knowledge on the management of myopia. This can be related to a study done in Saudi Arabia where they also agreed upon that there should be a raise in public awareness in order to educate those who do not know about myopia as well the management. This includes its benefits in slowing down the progression in order to avoid future ocular complications (15).

Attitudes towards myopia management also play a significant role in determining the success of treatment. Positive attitudes can promote compliance with treatment regimens, while negative attitudes can lead to non-adherence and poor outcomes. Attitudes can be shaped by various factors such as previous experiences with myopia management, perceptions of the effectiveness of treatment, and concerns about side effects.

Table 3.0 shows attitudes for participants regarding myopia management, the total mean score was 21.64 which indicated that overall, most patients had a good attitude towards myopia management with regards to sorting out treatment for myopia as well as adhering to necessary preventative measures too slow down progression of myopia. This can be related to a study in Singapore showed that respondents demonstrated a good level of awareness of the high prevalence of myopia in Singapore and there was also a good level of attitude towards myopia management to the protective role of outdoor activity in its development and progression (16).

Preferences are another critical factor in myopia management as they influence the treatment choices made by patients and healthcare professionals. Preferences can be influenced by various factors such as lifestyle, age, culture, and personal beliefs. For example, some patients may prefer contact lenses over glasses, while others may prefer orthokeratology or atropine eye drops. From the pie chart in figure 7.0, the most preferred choice of treatment is spectacles along with soft contact lens, this can be linked to table 4.0 which also shows that most of the values are closer to +1 which indicates that there is a positive linier relationship towards these choices. In conclusion, knowledge, preference, and attitude towards myopia management are all important factors that can influence the success of these interventions. By providing patients with accurate and clear information about their treatment options, taking into account their preferences and goals, and promoting a positive attitude towards myopia management, clinicians can help to improve outcomes and reduce the impact of myopia on patients' quality of life.

From a study on public awareness, 6.14% of the individuals believe that wearing full correction can delay the onset of myopia progression (17).

13.0 LIMITATION OF METHODOLOGY:

- Some patients were not able to recall their past experiences or tended to withhold information that could have affected results.
- Sampling bias; it is a specific environment and hence the population or those volunteering to participate may not be accurately representative of that of the actual general population.

14.0 CONCLUSION:

This study demonstrated that there is a lack of awareness of myopia management amongst patients and students in Trinidad. Knowledge, preference, and attitude towards myopia management are all important factors that can influence the success of these interventions. By providing patients with accurate and clear information about their treatment options, taking into account their preferences and goals and promoting a positive attitude towards myopia management, clinicians can help to improve outcomes and reduce the impact of myopia on patients' quality of life.

15.0 RECOMMENDATION:

- More studies should be done on Myopia and Myopia management within Trinidad as well as the Caribbean as there are currently little to no studies on the topic.
- More studies should be conducted internationally because there aren't enough studies done on the knowledge, preferences and attitudes towards myopia management amongst patients.
- Research on this topic should be done on a broader scale in order to get more accurate data on the knowledge, preferences and attitudes towards myopia management in Trinidad.

16.0 NEXT STEPS:

We hope that this study can influence the way eye care professionals in Trinidad approach myopia and myopia managements well as that the research conducted in this study can be used as the foundation for future research in the field. In doing so, Optometrists can better understand and develop effective strategies for managing myopia in Trinidad as well as spread awareness on the issue. However, there is a lack of research on myopia management knowledge and practices in Trinidad, particularly among patients and healthcare professionals. Therefore, this study's findings may help identify gaps in knowledge and practice related to myopia management and can contribute to the development of targeted public health interventions to improve myopia management in Trinidad.

17.0 REFERENCES:

1. Baird PN, Saw SM, Lanca C, Guggenheim JA, Smith Iii EL, Zhou X, et al. Myopia. Nat Rev Dis Primers. 2020;6(1):99.
2. Flitcroft DI, He M, Jonas JB, Jong M, Naidoo K, Ohno-Matsui K, et al. IMI - Defining and Classifying Myopia: A Proposed Set of Standards for Clinical and Epidemiologic Studies. Invest Ophthalmol Vis Sci. 2019;60(3):M20-M30.
3. Saw S-M, Matsumura S, Hoang QV. Prevention and Management of Myopia and Myopic Pathology. Investigative Ophthalmology & Visual Science. 2019;60(2):488-99.
4. Németh J, Tapasztó B, Aclimandos WA, Kestelyn P, Jonas JB, De Faber J-THN, et al. Update and guidance on management of myopia. European Society of Ophthalmology in cooperation with International Myopia Institute. European Journal of Ophthalmology. 2021;31(3):853-83.
5. Williams K, Hammond C. High myopia and its risks. Community Eye Health. 2019;32(105):5-6.
6. Theophanous C, Modjtahedi BS, Batech M, Marlin DS, Luong TQ, Fong DS. Myopia prevalence and risk factors in children. Clin Ophthalmol. 2018;12:1581-7.
7. McCarty CA, Livingston PM, Taylor HR. Prevalence of myopia in adults: implications for refractive surgeons. J Refract Surg. 1997;13(3):229-34.
8. Holden BA WD, Jong M, Sankaridurg P, Fricke TR, Smith EL,. Myopia: a growing global problem with sight-threatening complications. Community Eye Health.
9. Seet B, Wong TY, Tan DT, Saw SM, Balakrishnan V, Lee LK, et al. Myopia in Singapore: taking a public health approach. Br J Ophthalmol. 2001;85(5):521-6.
10. Braithwaite SS-ARNVFDAFVMSSDSRRBT. National Eye Survey of Trinidad and Tobago: the prevalence and risk factors for refractive error. 2016.
11. Ramsewak S5 VN, Deomansingh F3, Fraser A3, Maharaj V3, Sharma S3, Singh D2, Bourne RR1, Braithewaite T1. National Eye Survey of Trinidad and Tobago: the prevalence and risk factors for refractive error. 2016.
12. Eric R. Ritchey O, PhD, FAAO. Current Treatments in Myopia Management. 2019.
13. Pan CW, Ramamurthy D, Saw SM. Worldwide prevalence and risk factors for myopia. Ophthalmic Physiol Opt. 2012;32(1):3-16.
14. Brereton BM, Robinson ANR, Watts D. Trinidad and Tobago. 2023.
15. Cheung SW, Lam C, Cho P. Parents' knowledge and perspective of optical methods for myopia control in children. Optom Vis Sci. 2014;91(6):634-41.
16. Almujalli AA, Almatrafi AA, Aldael AA, Almojali HA, Almujalli AI, Pathan A. Knowledge, attitude, and practice about myopia in school students in Marat city of Saudi Arabia. J Family Med Prim Care. 2020;9(7):3277-80.
17. Salim1 AT, Keel2 S, Foreman1 J, Dirani M. Awareness of Myopia: A Survey Among Parents

Residing in Singapore. 2019.

18.0 APPENDICIES:

Ethics Approval:

THE UNIVERSITY OF THE WEST INDIES
ST. AUGUSTINE, TRINIDAD AND TOBAGO, WEST INDIES
CAMPUS RESEARCH ETHICS COMMITTEE
TELEPHONE: (1-868) 662-2002 ext. 82755 E-mail: campusethics@sta.uwi.edu

October, 10 2022

Dr. Kingsley Ekemiri
Destiny Lawrence, Shaina Oudit
Optometry Unit,
Faculty of Medical Sciences
Email: kingsley.ekemiri@sta.uwi.edu

Dear Dr. Kingsley Ekemiri,

Ref: CREC-SA.1806/10/2022

Title: Knowledge, Attitude and Preference towards the management of myopia amongst patients in Trinidad.

I am pleased to advise that your application for research on the above captioned topic has met the criteria for Exemption from Review from the Campus Research Ethics Committee, St. Augustine. You may proceed with data collection/research activities.

Sincerely,

Professor Jerome De Lisle
Chair
Campus Research Ethics Committee

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CONSENT FORM FOR SURVEYS/QUESTIONNAIRES

The following informed consent must be mandatorily obtained from any person invited to participate in a research study in the form of a survey or questionnaire.

This study has been approved by the University Ethics Committee *[application number]*

1. **TITLE OF RESEARCH: "**Knowledge, Attitude, and preference towards the management of myopia among patients in Trinidad**"**
2. **INVESTIGATOR: *[Dr.Kingsley Ekimere]***
3. **For this study, you will be completing a short survey about [*Your visual health*].**
4. **If you have any questions before you complete this survey, please contact me, [*kingsley.ekimere@sta.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 seleting "Yes" below, you acknowledge that you have read and understood that:**
   - 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.
   - You have given consent to be a subject of this research and respond to the survey / questionnaire(s) as truly as possible
   - 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**

Questionnaires:

Questionnaire for Patients and University Students (UWI)

Section A: Demographics

Age:

- 18-22
- 22-26
- 26-30
- 30-35

Gender:

- Female
- Male

Ethnicity:

- African
- Indian
- Mixed
- Other

Section B: Knowledge

Have you ever heard about myopia/myopia management?

- Yes
- No

Have you ever heard of the following treatments for slowing down myopic progression? (Chose option if heard of)

1. Single vision spectacles
2. Progressive spectacles
3. Ortho-K (night wear)
4. Soft contact lens (day wear)

Where did you hear about the above treatments(s) for slowing down myopic progression?

- Friends/Relatives
- Eye care practitioners
- Newspaper/Magazine
- Parents
- Doctors
- NA

Have you suffered from myopia?

- Yes
- No

In your opinion, how can myopia be treated?

- Wearing of eye glasses
- Avoiding excess use of electronic device
- Nutrition
- Surgery
- Do not know

Do you have a family history of myopia?

- Yes
- No

Section C: Attitude

Do you think that myopia if left untreated can lead to eye-related diseases later on?

- Yes
- No

Do you think that myopia management can slow down the progress of myopia?

- Yes
- No

Do you think that prolonged screen time affects the progression of myopia?

- Yes
- No

Do you think that spending time outdoors away from electronic devices can help in slowing down the progress of myopia?

- Yes
- No

Have you sort out any of the treatments for slowing down myopic progression?

- Yes
- No

If yes, which of the following did you chose?

- Single vision Spectacles
- Progressive spectacles
- Ortho-K
- Soft contact lens

Section D: Preferences

What option do you think would work best for preventing the progression of myopia?

- Glasses
- Contact lenses
- Eye drops
- Surgery

If you have myopia, which of the following do you currently use to correct it?

- Glasses
- Contact lenses
- Eye drops

Would you be interested in myopia management over traditional optical corrections?

- Yes
- No

Which of the following methods of myopia management would you prefer the most as your choice of treatment?

- Spectacles (under minus/PAL)
- Ortho-K (night wear)
- Soft Contact Lenses (day wear)
- None