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Perception and Barriers to Spectacle for Remedy to Refractive Eye Problems among Patients Accessing Refration at the Ophthalmology Units of Abubakar Tafawa Balewa University Teaching Hospital and Specialist Hospital Bauchi, Bauchi State, Nigeria

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Abstract:-

➢ ***Background:***

Spectacles stands as the economical, effective and generally tolerable method of refractive errors correction. The research purpose is to appraise the perception of spectacle lens for remedy to refractive errors among patients accessing refraction at the Abubakar Tafawa Balewa University Teaching Hospital and Specialist Hospital Bauchi.

➢ ***Methods:***

The study adopted descriptive survey research design; with convenient and purposive sampling techniques in participants' selection. Three hundred and eighty-four (384) male and female patients, aged 18 to 80 years, accessing refraction at the Ophthalmology Units of the hospitals comprised the respondents; with average age of 46.0±15.4 years and 47.9% were females. Questionnaire generated through the literature review was adopted in accessing the participants' demographics, perception and barriers to spectacles utilisation. Relationships between outcome variables were investigated using Pearson chi-square test at 95% confidence level and p-value < 0.05 was considered statistically significant.

➢ ***Results:***

Great number of the respondents (80.0%) were of the perception that spectacle lens would worsen their vision, but the elderly age group (87.5%), secondary (66.7%) and tertiary (75.0%) educational levels disagreed. There was association between respondents' educational level and perception of spectacles in the area of 'spectacle inconveniences and would lead to blindness (X^2=66.79, p-value=0.0000).

➢ ***Conclusion:***

Educational level and age played significant role in the respondents' positive perception of spectacle lens for refractive errors' correction. The study recommended patients counselling on the benefits of managing refractive errors with spectacles so as to eliminate associated misconceptions with its use.

Keywords:- *Refractive Errors, Perception, Spectacle Lens, Barriers, Visual Impairments.*

I. INTRODUCTION

Excellent and effective eyesight is crucial for efficient engagement in economic and academic activities, as well as maintaining personal well-being, independence and productive endeavours. Individuals cannot fully attend their capabilities or goals without sharp and effective eyesight. These eye's role is unique and vital, as evidenced by the extensive efforts made in various societies to support individuals with permanent vision impairment, by providing

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them with resources and adaptations that enables their independent navigation and daily functioning[1]. Hence, any issue affecting the eye's structure, function, or overall well-being can lead to various ocular problems such as refractive errors, cataract, strabismus, glaucoma, diabetic retinopathy and more. Therefore, prioritising good eye health is essential. However, despite the significant role of the eye, many individuals neglect proper eye care routine, leading to preventable causes of blindness being overlooked until complications arise[2]. This may be associated with individuals' perception disparity to ocular anomalies and usage of the treatment modalities. Awareness of common ocular defects is crucial in motivating people to seek help and adhere to prescribed treatments such as wearing of corrective glasses for refractive errors which is essential for addressing the vision problems effectively[3]. These refractive errors include hypermetropia (farsightedness or hyperopia), near-sightedness (short sight or myopia), astigmatism, and presbyopia (old-age-sight). These eye anomalies can significantly impair individual's visual performance, leading to far-reaching social and economic consequences particularly in low- and middle-income countries if left unattended to[4, 5]. They can also significantly impact the affected individual's quality of life, academic attainment, career prospects, and social relationship. They can also cause a range of uncomfortable and debilitating symptoms such as blurry vision, diplopia (intermittent double vision), lacrimation (excessive tearing), extreme light sensitivity (photophobia), eyestrain, itching and headache[6].

Refractive error is the inability of the optical systems of the eye to properly focus light from infinity on the retina for clear vision, with accommodation relaxed, thereby resulting in blurry vision. Uncorrected refractive errors pose a significant public health concern as a result of its widespread disposition. According to World Health Organization (WHO), uncorrected refractive errors are one of the major causes of global vision impairments, with an estimated 80% of cases being preventable[3, 7, 8, 9]. Avoidable visual impairment or blindness can be seen as impairment or blindness treatable or manageable by known, cost-effective measures. According to WHO, over 2.3 billion people worldwide suffer from poor vision as a result of refractive errors; with 670 million experiencing significant visual impairment as a result of lack of access to corrective treatment such as prescription glasses. Alarmingly, more than 90.0% of these individuals reside in rural and developing countries[5 10, 11]. Despite this high prevalence of refractive errors, only about 1.8 billion people globally have access to ocular examination and adequate treatment[12]. In addition, a survey conducted by the National Blindness and Visual Impairment Study Survey Group in Nigeria (2005-2007) revealed that refractive errors were the cause of 1.4% of avoidable blindness in individuals aged 40 and above, at the survey period[13, 14]. Unless adequate investments are made towards preventative measures, the number of people with avoidable visual impairments are likely to rise, especially in low- and middle-income nations[1].

The actual causes of refractive errors are unclear. Several risk factors contribute to their development, including genetic predisposition, nutritional factors, environmental influences, eyes' shape, eye ball size and corneal curvature[7, 15, 16]. Refractive errors as a physiological process, can also be influenced by age, and underlying health condition. They cannot be prevented; and are not caused or worsened by excessive eye use, or overstraining of the eyes[12, 15]. They are universal phenomenons affecting individuals of all genders, ages, professions, socioeconomic background and ethnicities[15]. Fortunately, they can be easily diagnosed, quantified and corrected with various methods such as prescription of spectacles, contact lenses, low vision aids and surgical procedures like photorefractive surgery[15, 17]. The selection of correction methods depends on individual factors such as financial capability, occupation, social status, price of product, and personal interest or hobbies[8]. If refractive errors are left uncorrected for extended period, they can lead to serious complications like amblyopia (lazy eye), strabismus (half past 4 o'clock eye), and double vision (diplopia)[18]. These complications have far reaching consequences impacting an individual's academic performance, psychological health, and social relationships, lading to reduced quality of life, decreased self-esteem and social isolation[19, 20]. Inspite the inclusion of refractive errors in the "VISION 2020 – The Right to Sight", initiative launched by WHO and the International Agency for the Prevention of Blindness (IAPB) in 1999, which aimed to increase access to affordable glasses for ameliorating refractive errors, the prevalence of uncorrected refractive errors remained high as a result of factors such as lack of awareness, limited demand for corrective measures, misconceptions about the effectiveness of spectacles, and beliefs system that using glasses will worsen vision or weaken one's eye strength[13, 21, 22, 23, 24]. Additionally, It could be due to lack of qualified eye care professionals to provide adequate and sufficient enlightenment and management; expensive nature of the corrective devices, and financial limitations to acquire it as well as adverse dispositions of the eye care professionals towards patients[13, 23]. Furthermore, it may result from breakage, minimal severity of the errors, parental disapproval, fear of being mocked, and dislike of the look of the spectacles[5, 20]. This study aimed to show forth the magnitude of perception, influence of age and educational level, as well as barriers to spectacle lens perception as a means of refractive errors correction by patients undergoing refraction at the Ophthalmology units of Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH) and Specialist Hospital, Bauchi (SHB), Bauchi State, Nigeria. Specifically, it seeks to explore the level of awareness, impact of age and educational level on perception and the barriers that limit the acceptance of spectacle lenses as a corrective measure.

A Spectacle lens is a vision-correcting device made up of two lenses set in a frame that sits on the nose and is secured in place by a pair of arms that extends over the ears, positioning the lenses about 12 millimetres away from the eyes to correct vision defect[24]. The use spectacles for correction of refractive errors has a rich history dating back to the Middle Ages (5th—15th century), and has remained the

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most affordable in terms of cost, non-invasive and widely acceptable solution for refractive errors as a result of its high success rate in improving visual acuity, and overall quality of life[23]. Unfortunately, societal attitudes and personal beliefs often influence what is deemed acceptable as treatment for eye defects, leading to a widespread reluctance to use spectacles as a corrective measure, even among the educated individuals[2]. However, research has highlighted the crucial importance of correcting refractive errors with spectacle lenses, as uncorrected poor vision can significantly hinder academic and social development of the victims, given that 80.0% of learning and daily interaction rely on vision[25, 26]. On the other hand, neglecting to address poor eye health, particularly by destigmatising spectacle lens use, can have far-reaching economic consequences. According to the Lancet Commission, based on conservative assessments in 2020, vision impairment is projected to result in a staggering annual global productivity loss of approximately US$411 billion. Moreover, addressing unaddressed refractive errors and cataract alone is estimated to require an investment of US$24.8 billion[1]. This highlights the urgent need to prioritize eye health and promote positive attitudes towards spectacle lens to mitigate these economic burdens. Spectacle can also serve multiple purposes beyond vision correction, including protection, concealment of eye defects, fashion statement and a symbol of dignity and sophistication[24, 27]. The stigma surrounding spectacle wear can lead to negative consequences, as individuals who need glasses may avoid wearing them, even when provided for free due to fear of being perceived as blind or visually impaired. This stigma can result in in significant psychological and social issues, including mental health problems like anxiety and depression, social isolation, low self-esteem, and behavioural challenges[6, 11, 23]. Also, some individuals believe that wearing glasses reduces their attractiveness to potential life partners, while others view it as a symbol of old age, making them cosmetically unappealing and embarrassing to wear in public[18, 22]. Despite these common misconceptions, wearing of spectacles actually enhances one's vision appearance and confidence, while also conveying a sense of innocence, humility and intelligence to others[5, 22]. In reality, spectacles have a positive impact on one's life, far beyond just correcting vision. However, there seem a significant association between patients' educational levels and their perception of spectacle lens use, which can influence usage rates. In addition, having timely knowledge of patients' psychological and social perceptions of spectacles lenses can help eye care professionals develop effective strategies to address challenges and improve outcomes. Moreover, this understanding can inform eye care specialists, policymakers, and stakeholders about the needs of the community, leading to improved productivity and reduced economic costs associated with uncorrected refractive errors. This study was prompted by the high levels of unfavourable perception and resistance to spectacle lens use among patients assessing refractive eye tests in the eye units of the two hospitals and aimed to provide a baseline understanding of the issue. The study's findings will provide a valuable insight for government, Non-Governmental Organisations (NGOs), educators and researchers to develop targeted health promotion activities that promote positive perception of spectacle lenses and address existing barriers to their use.

II. METHODOLOGY

The study was conducted using a descriptive survey research design at the Ophthalmology units of ATBUTH and SHB, Bauchi State; between June, 1 and August, 31, 2023, to achieve the purpose of the study. The two hospitals were selected among others because they have well established and functional eye units, modern clinical equipment and high volume of patients. They were also centrally located in the State capital and serve as referral centre for other health centres in the state. The study population consisted of 10,100 of the 27,260 male and female patients (aged 18 to 80 years), accessing refraction at the hospitals, seen in 2022; as documented by the Ophthalmology Records and Health Information Units of the two hospitals[28]. The sample size for the respondents was 384, computed making use of William G. Cochran's formula (1977) for estimating a known population's sample size as thus:

$$N = Z^2 P \frac{(1-P)}{D^2}$$

Where:
P = estimated proportion of the outcome of the response assumed to be (50.0%) or 0.50 of the respondents' level perception and barriers to spectacles for correction of refractive errors.
D = maximum acceptable sampling error (degree of precision) = (5.0%) or 0.05 in decimal notation:
Z = Normal deviation at the desired confidence interval. The value of the z-statistic at the 95% confidence interval level = 1.96.
N = minimum number of sample size (where target or total population > 10,000).

The (10.0%) non-respondents rate of 34 was not taken into account as the likelihood of dropouts and unforeseen circumstances was minimal. The respondents were recruited as they visited the clinics for eye care services until the required sample size was achieved. A multistage sampling procedure was employed, alongside with convenient and purposive sampling techniques, since not all patients seeking eye care services required refraction. A total of 384 respondents were selected, with 192 respondents sampled from each of the two hospitals. The bases for incorporation into the study were male and female patients aged 18 years and above, undergoing refraction test and consent to take part. A pretested, structured, self-administered questionnaire generated through the literature review was used in order to extract quantitative data from the respondents. It comprised of three parts (A, B, and C), covering respondents' demographics, perception, and barriers to spectacle lens for correction of refractive errors respectively.

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The questionnaire's validity was validated by three research experts; and its reliability was ascertained using test re-test method. The instrument was issued two times to fifty workers at Federal Medical Centre, Azare, Bauchi State, who were not part of the sample population, but had equivalent attributes with the study population. It was carried out within two weeks' duration. Pearson's Product Moment Correlation coefficient, was used to analyse the data obtained from the workers which yielded a coefficient of 0.78 (r = 0.78). In addition, the internal consistency of the instrument was determined using Cronbach's alpha statistics which yielded a coefficient value of 0.832. The two values were sufficiently high, hence valid for the study.

In order to gain access to the respondents, Ethical Clearance was obtained from the relevant committee, (Bauchi State Ministry of Health, and ATBUTH, Bauchi, respectively), and informed consent was obtained from all respondents before the study began. The researcher and three assistants administered three hundred and eighty-four (384) questionnaire to collect data for the study. The research assistants were trained on how to administer the questionnaire, and the completed copies were collected from the respondents on the same day. This procedure was carried on until the desired sample size was achieved. The respondents' records and information were kept confidential and anonymous, and were used exclusively for the purpose of the study.

Data analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 23, with results presented in frequencies, percentages, and tables. Descriptive statistics was employed to calculate the respondents' degree of perception and barriers to spectacles for correction of refractive errors. Pearson chi-square (X^2) test was applied to determine the significant associations between the outcome variables and $P< 0.05$ was assessed statistically significant at 95% confidence level. The study adhered to the tenets of the Declaration of Helsinki (2013).

III. RESULTS

- *Respondents' Demographics*

Table 1: Respondents' age, gender and educational levels distribution (n=384)

Age (years)	**Male f (%)**	**Female f (%)**	**Total f (%)**
18-38	74 (19.3)	61 (15.9)	135 (35.2)
39-59	91 (23.7)	78 (20.3)	169 (44.0)
60-80	35 (9.1)	45 (11.7)	80 (20.8)
Total	**200 (52.1)**	**184 (47.9)**	**384 (100.0)**
Education level			
Primary	40 (10.4)	20 (5.2)	60 (15.6)
Secondary	70 (18.2)	80 (20.8)	150 (39.1)
Tertiary	60 (15.6)	80 (20.8)	140 (36.5)
Non- formal	30 (7.8)	4 (1.0)	34 (8.8)
Total	**200 (52.1)**	**184 (47.9)**	**384 (100.0)**

Source: Researchers' Questionnaire 2023.

A total of three hundred and eighty-four (384) respondents participated in the study, with 200 males (52.1%) and 184 females (47.9%), aged between 18-80years (mean age: 46.0 ± 15.4). The age, gender and educational level distribution of the respondents are presented in (Table 1). The average ages of males and females were 44.9± 15.0 and 47.2 ± 16.0 respectively. The majority of respondents (79.2%) were between 18-59 years old, with the highest number in the 39-59 age range (44.0%). Most respondents (75.6%), had secondary (39.1%), or tertiary (36.5%) education, indicating a relatively educated population. The slight imbalance in the male-to-female ratio (1.1:1.0) may be related to chance due to the convenient sampling method used. The age range and education levels of the respondents suggest that the selected tertiary hospital were likely locate in an educational vicinity.

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Table 2: Respondents' Perceptions of Spectacle Lens and Influence of age of Respondents on Perception of Spectacle Lens for Correction of Refractive Errors in Selected Tertiary Hospitals in Bauchi State (n=384)

Statement: Which of the Following questions do you subscribe to?	**Male f(%)**	**Female f(%)**	**Total (%)**	**Age distributions (years) 18-38 n=139**	**39-59 n=169**	**60-80 n=80**
Wearing spectacle is an embarrassment and a cosmetic blemish?						
Agreed	160(41.7)	150(39.1)	80.8	95(70.4)	100(59.2)	30(37.5)
Using spectacles will worsen your vision or damage your eyes?						
Agreed	150(39.1)	160(41.7)	80.8	100(74.1)	90(53.3)	10(12.5)
Use of spectacles cause the eyes to be sunken or pushed in?						
Agreed	50(13.0)	90(23.4)	36.4	90(66.7)	76(45.0)	20(25.0)
Spectacles inconveniences and would lead to blindness?						
Agreed	160(41.7)	154(40.1)	81.8	110(81.5)	95(56.2)	35(43.8)
Others will tease or mock you for wearing spectacles?						
Agreed	150(39.1)	130(33.9)	73.0	120(88.9)	95(56.2)	35(43.8)
People who wear spectacles are seen as being visually handicapped or impaired or having bad eyes?						
Agreed	180(46.9)	170(44.3)	91.2	109(80.7)	102(60.4)	75(93.8)
Those who wear spectacles appear intelligent and smart?						
Agreed	160(41.7)	140(36.5)	78.2	98(72.6)	99(58.6)	25(31.3)
Those who wear spectacles look innocent and gentle?						
Agreed	80(20.8)	90(23.4)	44.2	45(33.3)	60(35.5)	28(35.0)
People who wear spectacles appear fashionable?						
Agreed	140(36.5)	120(31.3)	67.8	120(88.9)	130(76.9)	70(87.5)
Those who wear spectacles look professional?						
Agreed	120(31.3)	100(26.0)	57.3	80(59.3)	94(55.6)	29(36.3)
Spectacles are meant for only old people?						
Agreed	180(46.9)	160(41.7)	88.6	105(77.8)	91(53.8)	20(25.0)
Spectacles can relieve different forms of discomfort like headache, tearing and burning sensation?						
Agreed	90(23.4)	80(20.8)	44.2	58(43.0)	56(33.1)	45(56.3)
Spectacles can cause discomfort like headache, tearing, and burning sensation?						
Agreed	140(36.5)	130(33.9)	70.4	97(71.9)	112(66.3)	39(48.8)
Wearing spectacles while talking to elders is a mark of disrespect?						
Agreed	90(23.4)	44(11.5)	34.9	31(23.0)	68(40.2)	15(18.8)
Wearing spectacles will affect your opportunity for education and employment?						
Agreed	160(41.7)	140(36.5)	78.2	112(83.0)	8(58.0)	10(12.5)
Wearing spectacles will affect your business?						
Agreed	120(31.3)	134(34.9)	66.2	102(75.6)	69(40.8)	12(15.0)
Putting on spectacles will affect your opportunity for marriage?						
Agreed	140(36.5)	150(39.1)	75.6	91(67.4)	115(68.0)	24(30.0)
Use of spectacle is a sign of affluence?						
Agreed	150(39.1)	144(37.5)	76.6	88(65.2)	70(41.4)	35(43.8)
Putting on spectacles reduces the power of the eyes?						
Agreed	180(46.9)	170(44.3)	91.2	91(67.4)	84(49.7)	17(21.3)
Wearing spectacle prevents vision loss?						
Agreed	30(7.8)	40(10.4)	18.2	49(36.3)	72(42.6)	43(53.8)
Using spectacles is a curse from God?						
Agreed	80(20.8)	80(20.8)	41.6	78(57.8)	72(42.6)	14(17.7)

Source: Researchers' questionnaire 2023 Positive perception scale: 0-49% low, 50-69% moderate and 70-100% high. Negative perception scale: 0-49% low, 50-69% moderate and 70-100% high.

There was a high level of negative perceptions of spectacle lenses for correction of refractive errors among the respondents (Table 2). Great proportion (80.8%) of the respondents believed that the use of spectacle lens was both an embarrassment and a cosmetic blemish; and would worsen their vision or damage their eyes respectively. In addition, (81.8%), (73.0%) and (91.0%) of them agreed that spectacle inconveniences and would lead to blindness; others would tease them or mock them for wearing spectacles; and those who wore spectacles were seen as being visually handicapped

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or impaired or had bad eyes respectively. Furthermore, (91.2%) of them agreed that spectacles would reduce the power of their eyes while high and moderate numbers (81.8%), and (58.4%) respectively disagreed that wearing spectacles would prevent vision loss; and using spectacles was a curse from God respectively.

On the other hand, age had great positive influence on respondents' perception of spectacle lenses for remedy to refractive errors. Respondents of younger age (18-38) years, agreed that spectacles would worsen vision or damage the eyes (74.1%), while those of middle age (60-80) years, highly disagreed (87.5%), displaying wisdom associated with age. However, both age groups agreed that those who wear spectacles were seen as being visually handicapped or impaired or having bad eyes, (80.7%) and (93.8%) respectively. Similarly, both the younger and middle age groups agreed that putting on spectacles would affect ones' opportunity for marriage while the elderly group disagreed (67.4%), (68.0%) and 70.0% respectively. This indicated that age had vital influence on decision concerning spectacle choice for remedy to refractive eye challenges. (Table 2).

Table 3: Barriers to Respondents' Spectacle Perception for Correction of Refractive Errors in Selected Tertiary Hospitals in Bauchi State (n=384)

Statement: Which of the following Seem to cause barriers to spectacle use?	**Male f(%)**	**Female f(%)**	**Total f(%)**
It doesn't make any difference to your eye vision			
Agreed	130(33.9)	120(31.3)	65.2
It is stigmatising			
Agreed	140(36.5)	150(39.1)	75.6
It makes one look old			
Agreed	120(31.3)	134(34.9)	66.2
It makes one depend on it			
Agreed	80(20.8)	140(36.5)	57.3
I feel headache			
Agreed	110(28.6)	120(31.3)	59.9
It puts limitations to daily activities			
Agreed	80(20.8)	44(11.5)	32.3
Teased for wearing spectacles by others			
Agreed	140(36.5)	120(31.3)	67.8
It prevents normalisation of vision			
Agreed	160(41.7)	164(42.7)	84.4
It causes injury to the eye			
Agreed	40(10.4)	84(21.9)	32.3
It is very expensive			
Agreed	180(46.9)	160(41.7)	88.6

Source: Researchers' questionnaire 2023. Scale of Spectacle Utilisations Barriers: 0-49% Low, 50-69% Moderate, and 70-100% High.

The study found that the respondents strongly agreed that the following were barriers to accepting spectacle lenses for correction of refractive errors: 'high cost' (86.6%); 'prevention of normal vision' (84.4%); 'stigmatisation' (75.6%). Additionally, moderate agreement was found for the following barriers: 'fear of being teased for wearing spectacles' (67.8%); 'lack of perceived improvement in vision' (65.2%); and 'concern of appearing older while using spectacles' (66.2%). (Table 3).

Hypothesis 1. Ho1: There is no significant association between educational level of respondents and perception of spectacles for correction of refractive errors

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Table 4: Pearson chi-Square Results on Educational Level of the Respondents and Perception of Spectacles for Remedy to Refractive Errors. df=3

Statement: Which of the following questions do you subscribe to?	**Educational levels (n=60) Primary f(%)**	**f(%)**	**(n=150) Secondary f(%)**	**(n=140) Tertiary f(%)**	**(n=34) Non-formal**	X^2	**p-value**
Wearing spectacles is an embarrassment and a cosmetic blemish?							
Agreed	40(66.7)		50(33.3)	30((21.4)	26(76.5)	60.03	0.0000
Using spectacles will worsen your vision or damage your eyes?							
Agreed	49(81.7)		50(33.3)	35(25.0)	29(85.3)	85.83	0.0000
Use of spectacles causes the eyes to be sunken or pushed in?							
Agreed	39(65.0)		50(33.3)	35(25.0)	23(67.6)	42.48	0.0000
Spectacles inconveniences and would lead to blindness?							
Agreed	46(66.7)		55(36.7)	35(25.0)	31(91.2)	66.79	0.0000
Others will tease or mock you for wearing spectacles?							
Agreed	51(90.0)		110(73.3)	51(36,4)	29(85.3)	66.88	0.0000
People who wear spectacles are seen as being visually handicapped or impaired having bad eyes?							
Agreed	54(90.0)		126(84.0)	113(80.7)	30(88.2)	3.24	0.0000
Those who wear spectacles appear intelligent and smart?							
Agreed	42(70.0)		118(78.7)	112(80.0)	22(64.7)	5.29	0.1520
Those who wear spectacles look innocent and gentle?							
Agreed	27(45.0)		58(38.7)	58(41.4)	21(61.8)	6.29	0.0983
People who wear spectacles appear fashionable?							
Agreed	45(75.0)		124(82.7)	120(85.7)	28(82.4)	3.27	0.3520
Those who wear spectacles look professional?							
Agreed	35(58.3)		114(76.0)	96(68.6)	25(73.5)	6.77	0.0796
Spectacles are meant for only old people?							
Agreed	50(83.3)		48(32.0)	66(47.1)	28(82.4)	60.76	0.0000
Spectacles Can relieve different forms of discomfort like headache, tearing, and burning sensation?							
Agreed	20(33.3)		110(73.3)	99(70.6)	7(20.6)	45.39	0.0000
Spectacles cause discomfort like headache, tearing, and burning sensation?							
Agreed	47(78.3)		98(65.3)	88(62.9)	27(79.4)	7.13	0.0679
Wearing spectacles while talking to elders is a mark of disrespect?							
Agreed	40(66.7)		62(41.3)	66(47.1)	21(61.8)	13.43	0.0038
Wearing spectacle will affect your opportunity for education and Employment?							
Agreed	47(78.3)		50(33.3)	30(21.4)	26(76.5)	78.77	0.0000
Wearing spectacle will affect your business?							
Agreed	50(83.3)		60(40.0)	45(32.1)	25(73.5)	57.76	0.0000
Putting on spectacle will affect your opportunity for marriage?							
Agreed	45(75.0)		102(68.0)	45(32.1)	29(85.3)	61.90	0.0000
Use of spectacle is a sign of affluence?							
Agreed	42(70.0)		113(75.3)	60(42.9)	32(94.1)	50.01	0.0000
Putting on spectacles reduces the power of the eyes?							
Agreed	45(75.0)		62(41.3)	52(37.1)	32(94.1)	52.29	0.0000
Wearing spectacles prevents vision loss?							
Agreed	46(73.3)		64(42.7)	30(21.4)	10(29.4)	56.20	0.0000
Using spectacles is a curse from God?							
Agreed	44(73.3)		50(33.3)	25(17.6)	21(61.8)	65.96	0.0000
Grand value						**897.78**	**0.0000**

Source: Researchers' questionnaire 2023. X^2_{cal} = 897.78; $X^2_{0.05(3)}$ =7.815; p-value =0.0000; Hypothesis rejected.

Table 4, indicated the total calculated Pearson chi-square value of 897.78 and the comparable table value of 7.815 with a p-value of 0.0000. The hypothesis was rejected due to the fact that the X^2_{cal}=897.78 > $X^2_{0.05(3)}$=7.815, p=0.0000. This suggests that there was significant association between the educational level of the respondents and perception of spectacles for correction of refractive errors. In addition, the table indicated the calculated Pearson chi-square values for the following components of the educational levels of the respondents and perception of spectacles for correction of refractive errors with their comparable p-values that were significant: 'using spectacles will worsen your vision or damage your eyes' (X^2=85.83, p-value=0.0000); 'putting on spectacles reduces the power of the eyes' (X^2=52.29, p-value=0.0000); 'wearing spectacles prevents vision loss'

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(X^2=56.20, p-value=0.0000); and 'using spectacles is a curse from God' (X^2=65.96, p-value=0.0000).

IV. DISCUSSION OF THE FINDINGS

- *Perceptions of Respondents to Spectacle Lens*

There was high a level of misconceptions toward spectacle lens by the respondents. Majority of them are of the perception that spectacles inconveniences and would lead to blindness; others perceive it as an embarrassment and an ornamental flaw and a public disgrace. This was in tandem with studies carried out in Ghana; North India; and Dijlah University College, Baghdad, Iraq, respectively[4, 18, 29]. This misconception could be attributed to ignorance and low level of enlightenment of the respondents on refractive errors and spectacle lens use. Furthermore, great proportion of this study respondents were of the perception that others would tease them for wearing spectacles; people who wore spectacles were seen as being visually handicapped or impaired or having bad eyes, and spectacles were meant for old people. Also, high number of them was of the opinion that spectacles could cause discomforts like headache, tearing and burning sensation; while others agreed that the use of spectacles might influence their learning and job opportunity. Besides, a good number agreed that using spectacles might influence their business; and marriage opportunity. These agreed with the studies carried out in Sudan, Ghana, as well as Iraq respectively[4, 7, 11, 14]. People, especially parents sometimes felt disappointed, unhappy, worried, and concerned when they discovered that their wards required glasses at a tender age. These uncertified assumptions invariably tag some kind of stigma on anyone who puts on spectacle lenses. Subsequently, substantial number of adolescent develops with this perspective in mind, thereby refusing to look for remedy when confronted with eye challenges for the fear that they would be told to wear spectacles. Attitude of such nature could bring about consequential issues such as psychological personality disorder, apprehension, unhappiness, friendlessness, inferiority complex, along with aggression[4]. In addition, some believe that those that were using spectacles were suffering from malnutrition or nutritional deficiency. Individuals with defective vision face significant challenges in both educational and social lives without spectacle lenses, as significant proportion of daily activities are visually based. Therefore, understanding the psychosocial perception of patients towards wearing glasses can guide eye care professionals in addressing these attitudes, considering the fact that spectacle lens still persists as the less costly, non-contact and generally acceptable methods of managing refractive related visual impairment.

Also, there is a need for education, and enlightenment programmes about refractive errors and its management methods through the mass media, social media, public health experts, schools and various eye care professionals. With this, misconceptions, misconstrued information, false impressions, and persistent blemish associated with spectacles lens use within the masses could be dispelled.

- *Influence of Age on Respondents' Perception of Spectacle Lenses*

Age plays significant role in issues pertaining to life experiences. Advancement in age broadens ones' knowledge and perspective towards facts in life; in this context, spectacle lens use. The social and personality effects of spectacle use are often dependent on age, gender, educational level and other demographic factors. Knowledge comes with experience, and experience with age. Hence, it is rightfully to say that age is a great teacher. In this study, age had significant influences on the respondents' perceptions of spectacle for remedy to refractive errors. While the younger age group (18-38) years, and middle age group (39-59) years perceive spectacles as a thing that will worsen vision or damage the eyes; and lead to blindness, as well as being mocked by others; the elderly group (60-80) years disagreed. Previous studies assessing the perception of spectacle lens on self-esteem, indicated the negative perception of eyeglasses on attractiveness especially youths, and this was consistent with this study[4, 29]. However, it is important to know that the shape of the face and the spectacle lens were among the factors that influences the judgement of attractiveness. The perspective of judgement of the younger age is quite narrower than that of the elderly. Likely, they might feel that the use of spectacle lens at their younger age could cause a life time dependency[7]. In addition, for the fact that the tissues and nerves associated with vision quality in younger age are still effectively functional, their perception to spectacle lens will be that of the contrary, as they might not really fashion the hidden benefits of spectacle lens until they advanced in age or had a sudden eye defect that only spectacle lens could take care of. On the other hand, the elderly age group might have entered the presbyopic zone of life cycle, where tiny prints are too difficult to appreciate without the aid of spectacle lens as a result of age progression. This might also be attributed to the positive perception of spectacle lens by the elderly group to enhance their standard of living. Overall, age is a significant factor of consideration when prescribing and dispensing spectacle lens as it could affect both the visual performance and the comfort of the user.

- *Barriers to Respondents' Perception of Spectacle Lens*

Barriers refers to hindrances which could be physical, psychological, social or cultural that prevent or limit the acceptance or use of a particular thing, in this case, spectacle lens for correcting refractive errors. This study identified several barriers to the use of spectacle lenses for refractive errors correction, including 'high cost 88.6%'; perceived prevention of normal vision 84.4%'; 'stigma 75.6%'; 'concern of appearing older while using spectacles' 66.2%'. Others include: 'fear of being teased for wearing spectacles 67.8%'; 'lack of perceived improvement in vision 65.2%'; and 'perceived dependence on spectacles 57.3%'. (Table 4).

These findings align with previous studies in Zaria, Nigeria; Mozambique, and Igabi, North-western Nigeria respectively which highlighted high cost and stigma as significant barriers[10, 13, 14]. The high cost of spectacles could be associated with the public-private-partnership (PPP) entered into by the ophthalmology unit management of the hospitals for spectacle lens dispensing. In this case, the two

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parties involved would like to maximise profit, as a result prices of spectacles increases. It could also be associated with high inflation in the country. However, this could be addressed by incorporating dispensing of glasses into the national and social health insurance scheme. On the other hand, the misconception and negative perception about spectacle lens such as stigma, fear of being teased for wearing spectacles, lack of perceived improvement in vision, perceived dependence on spectacles and perceived prevention of normal vision was in line with the studies conducted in Ghana, and India respectively[11, 23, 29]. These false impressions about glasses could be related to lack of enlightenment, lack of social interactions, and deficient understanding of the advantages of spectacle lens in refractive errors correction. Additionally, negative past experiences with incorrect prescriptions, poorly fitting or uncomfortable spectacle lenses could lead to frustration and discouragement, causing individuals to be hesitant or unwilling to use them often, even if they are prescribed correctly. Furthermore, shortage of eye care professionals to provide adequate education and guidance on spectacle lenses and their benefits can also contribute to the barriers. Moreover, cultural beliefs and superstitions could play a significant role, as in some cultures wearing spectacle lenses could be stigmatised as a sign of weakness, old age, or visual impairment, leading to reluctance and hesitation in using them even when they are necessary for effective vision. To address these issues, eye care professionals should be engaged to provide services and enlighten the public about the benefits of spectacle lenses. This could help alleviate misconceptions, negative perceptions, and stigma associated with spectacle lens use.

- *Educational Level Influence on Respondents Perception of Spectacle Lens*

Pearson Chi-square evaluation indicated statistical significant association between respondents' educational level and perception of spectacles for correction of refractive errors in the selected tertiary hospitals. To ascertain the effect of the respondents' educational level on perception of spectacle for correction of refractive errors, psychosocial questions were directed to the respondents; and the comprehensive outcome were presented in Table 5. These four statements were significantly associated, with non-formal educational level, followed by primary educational level showing more preponderance: 'Spectacles are meant for only old people?' ($X^2_{(3)}$=60.76, p=0.0000); 'Putting on spectacles will affect your opportunity for marriage?' ($X^2_{(3)}$=61.90, p=0.0000) 'Putting on spectacles reduces the power of the eyes?' ($X^2_{(3)}$=52.29, p=0.0000); and 'Using spectacles is a curse from God?' ($X^2_{(3)}$=65.96, p=0.0000). This study result was collaborated with the study carried out in Ebonyi State, Nigeria[24]. This means that education rooted in ethics and principles empowers individuals with moral, ethical, and social values that significantly impact personal development, relationships, and preferences. Education is essential for an individual's wholesome development, instilling standards, promoting critical thinking, and enabling informed choices and options. By distinguishing right from wrong, and understanding the pros and cons, education shapes a moral compass that guides action, including the use of spectacle lenses.

Highly educated people could have a greater understanding of the technical aspects of spectacle lens design and might be aware of the latest advancement in spectacle lens technology. This could lead to a preference for spectacle lens that offer specific features such as anti-reflective coating or blue light filtering. They might be more likely to seek out specialised lens for specific tasks, such as computer work or reading. On the other hand, individuals with lower levels of education might be ignorant of such advancement in spectacle lens technology offer. In all, education is just one of the many factors that can influence an individual's spectacle lens preferences and needs[15]. Therefore, eye care practitioners should prioritise counselling and enlightenment to address misconceptions and promote informed decision-making about spectacle lenses to their client and the general public

V. CONCLUSION

Generally, educational level and age played significant role in the respondents' perception of spectacle lens for remedy to refractive errors, with secondary and tertiary educational qualification showing better perception a well as the elder and eldest groups. These positive perceptions the negative ones shown by the other age group and educational levels could be attributed to their level of understanding, knowledge and enlightenment about refractive errors and correction methods. Nevertheless, the main limitations to spectacle use were its expensive nature and stigma which outweigh the positive perceptions of the other age and educational groups.

RECOMMENDATIONS

- Patients seeking refraction services at the Ophthalmology units should receive counselling on the advantages of using spectacle lenses for managing refractive errors. This will help dispel misconceptions, negative attitudes, and cultural stigmas surrounding the use of spectacles.
- Emphasising routine eye check-ups at government approved Ophthalmology units by the public is crucial for early detection and prevention of avoidable visual impairment caused by refractive errors. To achieve this, the ministry of health should integrate affordable eye screening methods into the healthcare system, ensuring easy accessibility and sustainability through adequate resource allocation.

REFERENCES

[1]. International Labour Organisation. 'Eye health and the world of work', Geneva: International Labour Office; 2023. Available from: http://www.ilo.org/publns.

[2]. Borode SB, Salawu RA. Knowledge and Acceptance of Corrective Measures for Refractive Errors Among Teachers in Selected Secondary Schools in Ido/Osi Local Government Area, Ekiti State. International Journal of Medicine, Nursing & Health Sciences. 2022; 3(2):25-34.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24MAY734

[3]. Pallerla SR, Khanna RC, Krishnaiah S, Keeffe J. Awareness and knowledge about refractive errors and strabismus in South Indian population. Int J Med Public Health. 2022; 9(3):1312-1317. https://dx.doi.org/10.18203/2394-6040.ijcmph20220688
[4]. Mukhaiseer MH, Faisal V. Attitudes and Beliefs of Students to spectacles wear for the correction of refractive errors in Dijlah University College. DJSE. 2021; 2(2):15-21.
[5]. Vankudre GS, Noushad B. Barriers and Perception Towards Spectacle Wear among a Student Population of University of Buraimi, Oman. Sultan Qaboos University Med J. 2021; 21(3):416–422. https://doi.org/10.18295/squmj.4.2021.004
[6]. Garg P, Malik M. Awareness of Presence of Refractive error among Rural North Indian Population. Journal of Ophthalmology and Research. 2020; 3(2):16-26.
[7]. Alrasheed SH, Naidoo KS, Clarke-Farr PC. Attitudes and perceptions of Sudanese high-school students and their parents towards spectacle wear. Afr Vision Eye Health. 2018; 77(1):1-7. https://doi.org/10.4102/ aveh. v77i1.392
[8]. Alswailmi FK, Mohamed AG, Gomma SM, Khalafallah H, Mohamed HHA. Attitude of Female Undergraduates Towards Spectacle Correction of Refractive Errors. COJ Nursing & Healthcare. 2018; 4(3):422-426.
[9]. Sethu S, Bharani S, Phanindra BN, Rishi BR, Rahul A, Lisa K. Prevalence of refractive errors, uncorrected refractive error, and presbyopia in adults in India A systematic review. Indian Journal of Ophthalmology. 2019; 67(5): 583-592.
[10]. Bambamba J, Bambamba Â, Fereira G, Pires P, Cossa Y. Knowledge, Attitudes and Practices (KAP) about Refractive Error among Students Attending Faculty of Health Sciences at Lúrio University in Mozambique. 2020. Open Journal of Ophthalmology. 2022; 12: 57-69. https://doi.org/10.4236/ojoph.2022.121007
[11]. Mireku A, Ebenezer E. Attitudes and Beliefs of Undergraduate Students to Spectacle Wear. JOJ Ophthal. 2017; 4(2): 1-5. https:// doi.org/002 10.19080/JOJO.2017.04.555634.
[12]. Rodge HY, Lokhande S. Refractive Error in Children. International Journal of Current Research and Review. 2020; 12(23):185-188. http://dx.doi.org/10.31782/IJCRR.2020.122307
[13]. Abdulsalam HO, Muhammad N, Pam V, Oladigbolu KK. Pattern of Ametropia, Presbyopia, and Barriers to the Uptake of Spectacles in Adult Patients Attending a Hospital in Kaduna State. Journal of the West African College of Surgeons.2022; 12(1):28-33.
[14]. Kyari F, Gudlavalleti MVS, Sivsubramaniam S, Gilbert CE, Abdull MM, Entekume G, Foster A. Prevalence of Blindness and Visual Impairment in Nigeria: The National Blindness and Visual Impairment Survey. Investigative Ophthalmology & Visual Science. 2009; 50(5):2033-2039.
[15]. Grosvenor T. Primary Care Optometry. 4th ed. Butterworth-Heinemann; 2018. p. 29-30, 48,124-125,488-495.
[16]. Khan NE, Mahomedy M, Mngadi L, Moola Z, Moosa Z, Ndwandwe G, Ntombela ASM. Knowledge, attitudes and practices towards refractive error amongst students. Afr Vision Eye Health. 2022; 81(1):1-7.
[17]. Gopishetty M, Ikram SS, Puri SK. Awareness, Knowledge of Spectacles to Contact Lens Usage among Health Care Students. Indian Journal of Clinical and Experimental Ophthalmology. 2022; 8(2): 254–258.
[18]. Maitreya A, Dhasmana R. Spectacles and Refractive Errors: Children's Perspective. The Official Scientific Journal of Delhi Ophthalmological Society. 2017; 28(2): 30–35.
[19]. Ezinne NE, Mashige KP, Akano OF, Ilechie AA, Ekemiri KK. Spectacle utilisation rate and reasons for non-compliance amongst primary school children in Onitsha, Anambra state, Nigeria. African Vision and Eye Health. 2020; 79(1):16-19. https://doi.org/10.4102/aveh.v79i1.544
[20]. Morjaria P, Evans J, Gilbert C. Predictors of Spectacle Wear and Reasons for Non wear in Students Randomized to Ready-made or Custom-made Spectacles Results of Secondary Objectives from a Randomized Non inferiority Trial. JAMA Ophthalmol.2019;137(4):408414. https://doi.org//10.1001/jamaophthalmol.2018.6906
[21]. Abdulhussein D, Hussein MA. WHO Vision 2020: Have We Done It? Ophthalmic Epidemiology. 2022; 1, 1-10. https://doi.org/10.1080/09286586.2022.2127784
[22]. Acquah EK, Essien E, Ablordeppey R, Donkor R, Ankamah-Lomotey R, Nartey A. Attitudes and beliefs of undergraduate students to spectacle wear in Ghana. Adv Ophthalmol Vis Syst. 2018; 8(1):30–35.
[23]. Ogbu N, Arinze O, Okoloagu N, Edak E, Ossai EN, Ireka WOJ, Ogbonnaya C, Okosa CC. The knowledge of rural secondary school students on spectacle wear for correction of refractive errors: a southeast Nigerian study. Adv Ophthalmol Vis Syst. 2022; 12(1):3–28.
[24]. Mukhaiseer MH, Faisal V. Attitudes and Beliefs of Students to spectacles wear for the correction of refractive errors in Dijlah University College. DJSE. 2021; 2(2):15-21.
[25]. Sano BS, Diyale SP. Barriers to spectacle acceptance among secondary school students in Igabi, North-Western Nigeria. Int J Community Med Public Health. 2020; 7(11):4283-4288.
[26]. Smith E, Congdon N, Frick K, Kassalow J, Naidoo K, Sloan JA. Eyeglasses for Global Development: Bridging the Visual Divide. World Economic Forum 2018, June. Available from: https://www.weforum.org

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/IJISRT24MAY734

[27]. Desalegn A, Tsegaw A, Shiferaw D, Woretaw H. Knowledge, attitude, practice and associated factors towards spectacles use among adults in Gondar town, northwest Ethiopia. BMC Ophthalmology. 2016; 16:184-195. https://doi.org/10.1186/s12886- 016-0357-3
[28]. Department of Ophthalmology, ATBUTH, Bauchi, & SHB, Record unit. (2022).
[29]. Boaitey O. (2018). Knowledge, Attitude and Perception of Spectacle Use Among Senior High School Students in Ghana. International Journal of Healthcare Sciences. 2022; 5(2):632-640.

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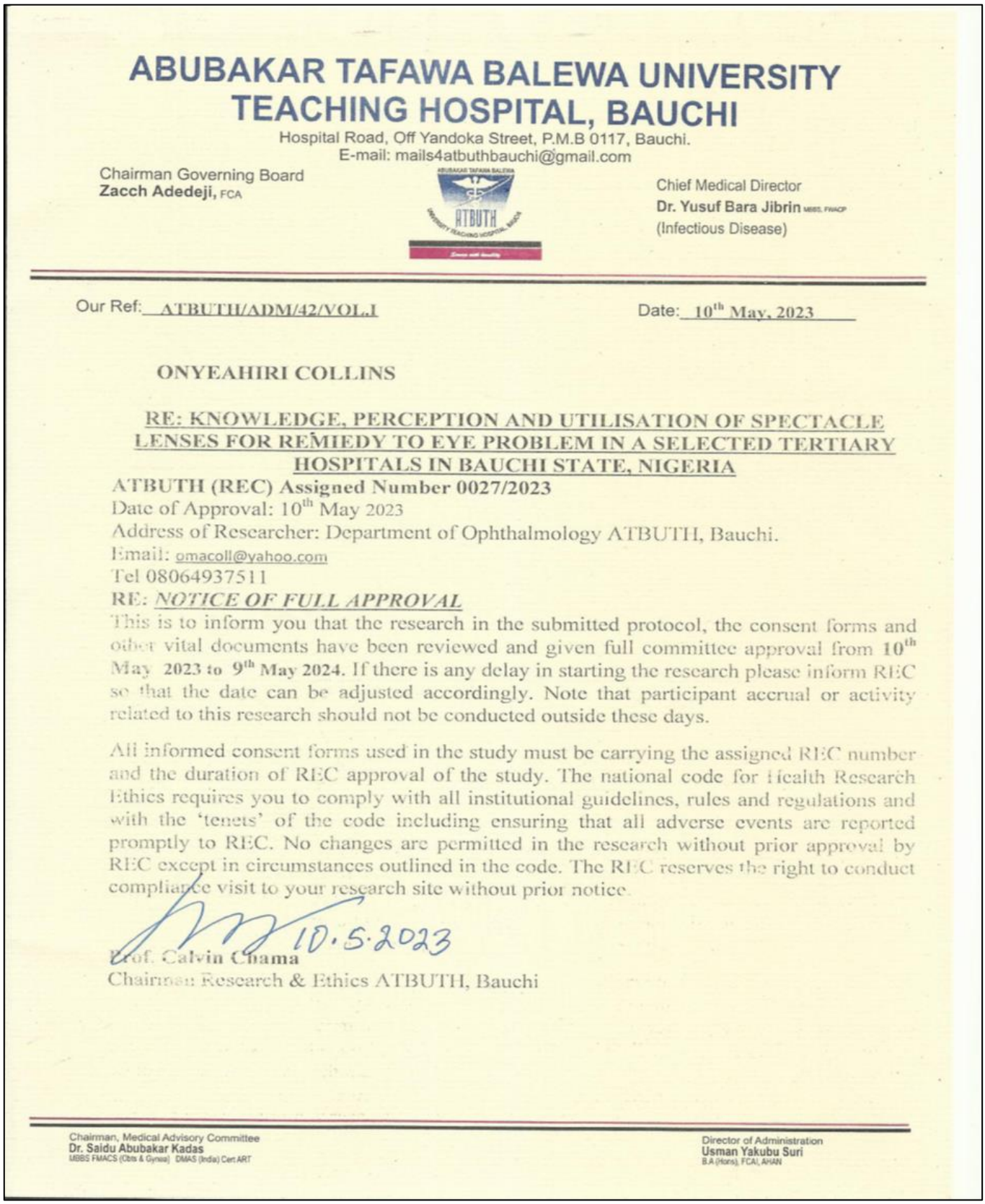
APPENDICES

Appendix 1: Ethical clearance from ATBUTH, Bauchi



ABUBAKAR TAFAWA BALEWA UNIVERSITY TEACHING HOSPITAL, BAUCHI

Hospital Road, Off Yandoka Street, P.M.B 0117, Bauchi.
E-mail: mails4atbuthbauchi@gmail.com

Chairman Governing Board
Zacch Adedeji, FCA

Chief Medical Director
Dr. Yusuf Bara Jibrin MBBS, FWACP
(Infectious Disease)

Our Ref: ATBUTH/ADM/42/VOL.I Date: 10th May, 2023

ONYEAHIRI COLLINS

RE: KNOWLEDGE, PERCEPTION AND UTILISATION OF SPECTACLE LENSES FOR REMIEDY TO EYE PROBLEM IN A SELECTED TERTIARY HOSPITALS IN BAUCHI STATE, NIGERIA

ATBUTH (REC) Assigned Number 0027/2023
Date of Approval: 10th May 2023
Address of Researcher: Department of Ophthalmology ATBUTH, Bauchi.
Email: omacoll@yahoo.com
Tel 08064937511
RE: *NOTICE OF FULL APPROVAL*

This is to inform you that the research in the submitted protocol, the consent forms and other vital documents have been reviewed and given full committee approval from **10th May 2023 to 9th May 2024.** If there is any delay in starting the research please inform REC so that the date can be adjusted accordingly. Note that participant accrual or activity related to this research should not be conducted outside these days.

All informed consent forms used in the study must be carrying the assigned REC number and the duration of REC approval of the study. The national code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the 'tenets' of the code including ensuring that all adverse events are reported promptly to REC. No changes are permitted in the research without prior approval by REC except in circumstances outlined in the code. The REC reserves the right to conduct compliance visit to your research site without prior notice.

10.5.2023
Prof. Calvin Chama
Chairman Research & Ethics ATBUTH, Bauchi

Chairman, Medical Advisory Committee
Dr. Saidu Abubakar Kadas
MBBS FMACS (Obts & Gynae) DMAS (India) Cert ART

Director of Administration
Usman Yakubu Suri
B.A (Hons), FCAI, AHAN

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Appendix 2: Ethical clearncance from Bauchi State Ministry of Health, in respect of Specialist Hospital, Bauchi

GOVERNMENT OF BAUCHI STATE
MINISTRY OF HEALTH

Bello Kirfi Road, Off Murtala Mohammed Way,
P.M.B. 065, Bauchi,
Email: bauchismoh@gmail.com

Ref No.: MOH/GEN/S/1409/II
Date : 8th May, 2023

PROTOCOL REG. N0: BSMOH/REC/33/2023
PROTOCOL APPROVAL N0: NREC/03/11/19B/2021/033
PROTOCOL APPROVAL DATE N0: May 2023 TO April 2024

Onyeahiri Collins
Department of Public Health,
Faculty of Health Sciences,
National Open University of Nigeria,
Bauchi Study Centre.

ETHICAL CLEARANCE FOR SUBMITTED PROTOCOL:
"Knowledge, Perception, and Utilisation of Spectacle Lenses for Remedy to Eye Problem in Selected Tertiary Hospitals in Bauchi State, Nigeria,"

The Bauchi State Health Research Ethics Committee (HREC) under the State Ministry of Health has received the above named protocol for Ethical Clearance and approval in line with the guidelines set by the Committee. The protocol was reviewed and the Committee noted that the research falls under the Low Risk Category which does not entails clinical trials or any invasive procedures.

2. Consequently, the Committee has granted expedited approval for the research to be conducted within the stipulated timeframe above. However, you should share with us your workplan clearly indicating the start date, where and when to visit the *research* site(s) and **also the final results of your findings**

3. The Committee requires you to comply with all Institutional Guidelines, Rules and Regulations and with the Tenets and Code of the National Health Research Ethics Committee including that all adverse events are reported promptly to the Committee. **No changes are permitted in the research without prior approval by the Committee** except in circumstances outlined in the Code. The Committee reserves the right to conduct compliance visit to your research site at short notice.

For(Nuru Yakubu Umar)
For: Hon. Commissioner