

Quantitative and Qualitative Assessment on Individual Perception and Self-Care Practice of Refractive Error in a Rural Community in Enugu, South East Nigeria

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ABSTRACT

Background: Globally, uncorrected refractive errors have been identified as the most common cause of visual impairment and the second leading cause of treatable blindness. **Aim:** This study quantitatively and qualitatively assessed individual perception and self-care practice of refractive error (RE) in a rural community in Enugu State. **Subjects and Methods:** A descriptive, cross-sectional, population-based survey was done in Amorji community, Enugu State. A pretested, researcher-administered questionnaire was used to interview the respondents on knowledge of causes, features and treatment of RE, their self-care practices, and attitudes toward RE. Focus group discussions (FGDs) and in-depth interviews (IDIs) were also carried out to qualitatively assess these parameters. Data was analyzed using SPSS version 20. **Results:** A total of 522 adults, 307 (58.8%) males, and 215 (41.2%) females aged 43 ± 31.6 (range 18–83) years participated in the study. Of the participants, 235 (45.0%) had good knowledge of RE; 272 (52.1%) had positive attitude toward RE, while only 51 (9.8%) had good self-care practice. Educational status was significantly (p = 0.02) associated with participants' knowledge, attitude, and self-care practices. Good knowledge significantly (p = 0.001) influenced attitude and self-care practices among the participants. Results from FGDs and IDIs were in agreement with those obtained from the questionnaire-based part of the study. **Conclusion:** The participants from Amorji community had good knowledge of the features of RE but poor knowledge of its causes and treatment. They also exhibited positive attitude, but poor self-care practices toward refractive errors.

KEYWORDS: Perceptions, refractive error, self-care practice

INTRODUCTION

Refractive error is defined as a state in which the optical system of the non-accommodating eye fails to bring parallel rays of light to a focus on the retina.^[1] This results in blurring of vision which might be so severe as to cause visual impairment.^[2]

Epidemiological studies worldwide have highlighted the escalating prevalence of refractive error.^[3–5] Globally, uncorrected refractive error is the main cause of moderate-to-severe visual impairment accounting for 42.0% of visual impairment and 18.0% of blindness.^[2] Out of the 153 million people with uncorrected refractive

error living in the world today, over 90% live in rural and low-income countries.^[6]


In the Nigerian Blindness and Visual Impairment survey (2005–2007), uncorrected refractive error accounted for 77.9% of mild and 57.1% of moderate and 11.3% severe visual impairment. Overall, refractive error caused visual impairment in 2.46 million adults in

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Nigeria.^[7] Uncorrected refractive errors are the second leading cause of treatable blindness, globally.^[3,6]

Myopia, hypermetropia, and astigmatism have been identified as the three types of refractive errors. In addition to the type-specific visual defect associated with each variant of refractive error, the refractive error patient might present with a myriad of clinical features collectively known as asthenopia or “eye strain.”^[2] These include headaches which could be frontal or occipital, itching, redness, eye pain, or aches around the eye. Blurring of vision could be severe enough to cause visual impairment.^[2]

Uncorrected refractive error adversely impacts an individual’s social life and economic activities by restricting educational and employment opportunities of otherwise healthy individuals.^[3] Consequently, it leads to substantial economic losses by the individual and the society and compromises the individual’s independence, well-being, and overall quality of life.^[8,9]

In recognition of the public health significance of uncorrected refractive error the global initiative, Vision 2020: The Right To Sight established by the World Health Organization and International Agency for Prevention of Blindness in collaboration with other non-governmental organizations involved in a wide range of eye and community-based healthcare activities aimed at the elimination of avoidable blindness and visual impairment listed uncorrected refractive error as one of the five priority eye diseases.

Although corrective measures are affordable, ignorance and stigmatization especially in low- and middle-income countries (LMICs) have remained a major barrier to accessing available refractive error services.^[10] This stems from the fact that there is paucity of research data on knowledge, attitudinal disposition, and self-care practice patterns, especially in rural communities. The literature has been dominated by reports on the prevalence and causes of refractive errors, not much has been said on the individual’s perspective on refractive errors, its psychosocial effect, and possible reasons for low uptake of refractive error services in developing countries especially in the rural population.

The burden of refractive error is set to increase in the coming years^[11]; thus, there is an urgent need for evidence-based/data-supported interventions to enhance knowledge and attitudes and self-care practices on refractive errors, especially in rural communities and low-resource settings. The present study conducted a quantitative and qualitative population-based survey with a view to providing baseline data that could be used in

addressing these challenges in our local environment. The health policy-makers and implementers, eye care planners and providers, and other stakeholders in eye care delivery, under similar settings in LMICs, may find our report useful in strategizing for comprehensive coverage of refractive error services.

MATERIALS AND METHODS

Study design

The study was a descriptive, cross-sectional, population-based survey with mixed method approach (quantitative/qualitative) conducted in Amorji community, Enugu East LGA.

Amorji is one of the 4 clans of 24 communities in Nike (the headquarters of the Enugu East LGA). Amorji community is made up of 14 villages which are divided into three administrative zones based on their ancestral history, with a projected population of about 50,100 people.

It lies in the tropical rainforest climatic belt with two seasons of the year: dry and rainy seasons. The inhabitants of this community are predominantly ethnic Ibos, with Igbo and English as their main languages. Their main occupations are: farming, trading, and artisanship.

Sample size estimation

The minimum sample size required for the study was calculated using the Fisher’s formula:

$$N = \frac{Z^2 X P q}{d^2}$$

Where

N = desired sample size

Z = 1.96, i.e., standard normal deviate at confidence interval of 95%

P = 28.9% (0.29), i.e., prevalence value previously reported in a similar survey.^[12]

q = 1 – P

d = desired precision due to random sampling error of 5% = 0.05

The proportion of individuals in the population with the factor of interest was determined from the formula.

$$\begin{aligned} N &= \frac{(1.96)^2 (0.29) (1-0.29)}{(0.05)^2} \\ &= 79.098/0.0025 \\ &= 316.3 \end{aligned}$$

The calculated sample size of 316 was multiplied by 1.5, the design effect due to cluster sampling method, to give a new sample size of 474. This was inflated by 10.0% to obtain a modified sample size of 522 in order to take care of refusals to participate in the study.

Ethics

Ethical approval was obtained from the Medical and Health Research Ethics Committee of the University of Nigeria Teaching Hospital, Ituku-Ozalla, Enugu.

Data collection

A multistage cluster random sampling technique was used.

First stage was selection of one of the four ancestral clans of Nike by simple random sampling. Next, a sketch of the map of the selected ancestral clan was drawn on a paper on a scale of 1 cm to 10 m. A corner was selected from the map and a point chosen from the corner. This point was located on the map to be Amorji community which served as the study population. The next stage was the selection of the respondents which was done by cluster sampling.

Quantitative study

The fourteen villages that make up Amorji were divided into three administrative zones which served as clusters. Zone 1 has five villages with a population of 13,100; Zone 2 has four villages with a population of 12,800, while Zone 3 has five villages with a population of 23,900. The proportion of 522 participants for each zone was calculated taking into cognizance their population: Zone 1 = 131; Zone 2 = 131, and Zone 3 = 260. Using a simple random sampling, one village with 280 households was selected from Zone 1; one village with 350 households was selected from Zone 2, while two villages with 210 and 360 households, respectively, were selected from Zone 3. Using a systematic random sampling, k -interval (sampling interval) was calculated as $k = N/n$, where N = number of households in the selected village; n = number of participants recruited in the selected village.

Thus, every second household in zones 1 and 2 and every third household in Zone 3 were selected to get the required sample size of 522. Selection of households started from the entrance to the selected village. From each of the selected household, one eligible adult was recruited by simple balloting. Data were collected using a structured pretested researcher administered questionnaire. The selection continued until the required number was achieved. Any household in which no eligible participant was around for recruitment or in which none gave voluntary informed consent was skipped without revisiting the household.

Qualitative study: Focus group discussion (FGD)

From the other villages that did not take part in questionnaire-based study, 1 village was selected from each zone by simple balloting to take part in focus group discussion. Each FGD also comprised of participants within the same age-group, e.g., youth, middle age, and elderly people. A total of six focus group discussions (FGDs) comprising three all-male and three all-female groups, with 10 participants in each group, were conducted in the three zones. Participants were drawn from women, men, youth, and religious societies by convenience sampling. Each FGD was homogenous in age and genders to enable participants express their true opinions. The criteria for participation in FGD were 18 years or older, uninterrupted residence in the study community for the past 1 year, and non-participation in the preceding questionnaire-based part of the same study. The discussion with each focus group was conducted using FGD guide and recorded.^[13]

In-depth Interview (IDI)

Community leaders of the study community were selected for IDI. One village head was randomly selected from each zone from the villages that did not take part in either questionnaire or FGD study. IDI was held in their various homes using IDI/FGD guide. The interviews were recorded.

Data analysis

Data collected were cleaned, coded, and entered into a computer; a copy of the cleaned data was stored in an external hard drive. Quantitative data were analyzed using the Statistical Package for Sciences (SPSS), version 21, (SPSS Inc, Chicago, Illinois, USA).

Six questions were used to assess the respondents' knowledge while their attitude was assessed with 12 questions. Their practice with regard to refractive error was assessed using three questions. Respondents answers to questions on knowledge and attitude with regard to refractive error were graded in percentage, and the total score of the respondents in percentage was used to categorize respondents as follows: good knowledge ($\geq 50\%$) and poor knowledge ($< 50\%$); good attitude ($\geq 50\%$) and poor attitude ($< 50\%$), while respondents self-care practice were grades as follows: good self-care practice (having had routine eye examination within the past 2 years) and bad self-care practice (not having had routine eye examination for more than 2 years).

Descriptive statistics was performed to categorize respondents by: sociodemographic and clinical characteristics and knowledge, attitude and self-care practices. Descriptive data were presented as frequencies,

percentages and proportions. Bivariate comparative statistics, to test for significance of the observed intergroup differences was performed using Chi-square for categorical/discrete variables and Student's t-test for metric/continuous variables. In all comparisons, a *P* value <0.05% with the associated odds ratio and 95% confidence interval was considered statistically significant.

The notes and tape recorded information from the FGD and IDI were analyzed using the Atlas.ti software package. The notes and tape recordings went through several phases of analysis. A preliminary analysis was conducted in order to get a general sense of the data and reflect on its meaning through an *initial coding*. A more detailed analysis was performed, and data was divided into segments/units that reflected specific knowledge, attitude, and practices of participants through *focused coding*.

RESULTS

A total of 522 participants comprising of 307 (58.8%) males and 215 (41.2%) females took part in this

study. They were aged 43 ± 31.6 years with a range of 18–83 years and a modal age-group of 41–60 years [Table 1]. Some of the participants had no formal education (33.1%), while 11.7% had tertiary education. Also the highest proportion (26.6%) of the participant had farming as their occupation, and most (61.1%) were ever married [Table 1].

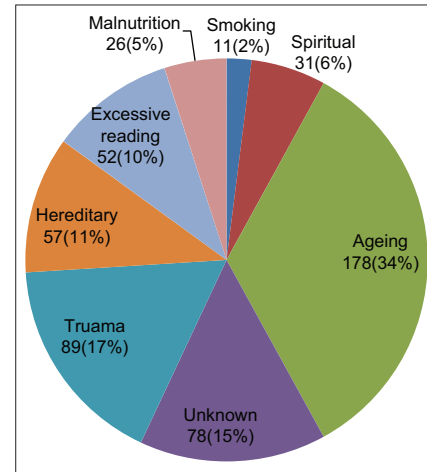


Figure 1: Participants' knowledge of causes of refractive error

Table 1: Participants' sociodemographic characteristics

Characteristics	n (%), n=522
Age	
≤30	120 (22.9)
31-40	71 (14.6)
41-50	168 (32.2)
51-60	113 (21.6)
61-70	32 (2.3)
71-80	8 (6.1)
81-90	4 (0.7)
Sex	
Male	307 (58.8)
Female	215 (41.2)
Educational status	
No Formal	173 (33.1)
Primary	148 (28.4)
Secondary	140 (26.8)
Tertiary	61 (11.7)
Occupation	
Farming	139 (26.6)
Trading	80 (15.3)
Civil servant	76 (14.6)
Artisanship	90 (17.3)
Student	68 (13)
Retiree	12 (2.3)
Unemployed	57 (10.9)
Marital status	
Single	203 (38.9)
Married	264 (50.6)
Widowed/Divorced/Separated	55 (10.5)

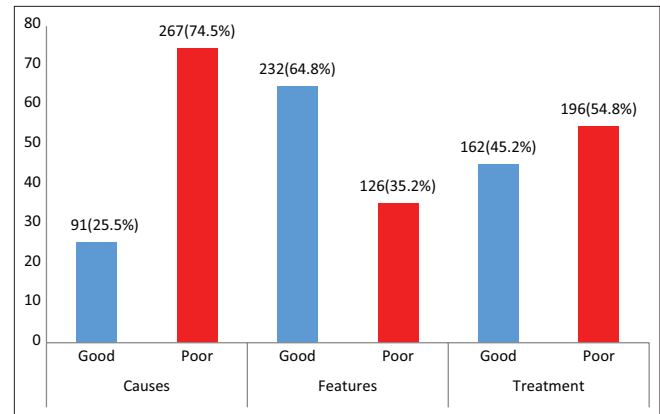


Figure 2: Profile of participants' knowledge of the causes, features, and treatment of refractive error

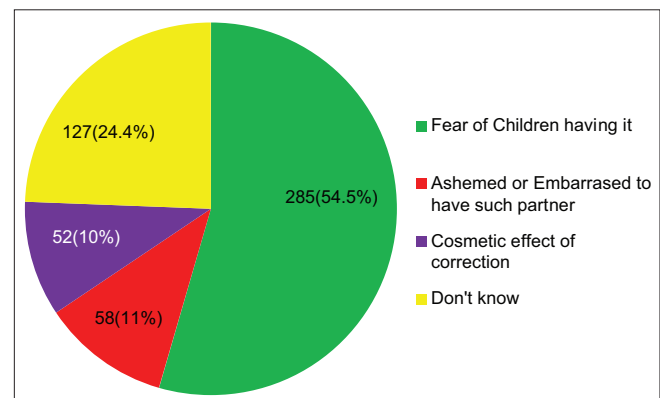


Figure 3: Participants' reasons for unwillingness to marry someone with refractive error

Table 2: Respondents’ knowledge of causes, features, and treatment of refractive error

	n=522
Heard about refractive error?	
Yes	358 (68.6%)
No	164 (31.4%)
Features	
Difficulty seeing far objects	116 (22.3)
Headache	28 (5.3)
Difficulty seeing near objects	53 (10.1)
Squinting	184 (35.2)
Difficulty seeing both far/near objects	67 (12.9)
Tearing	74 (14.2)
Treatment options	
Spectacles	154 (29.6)
Unknown	201 (38.5)
Surgery	41 (7.8)
Contact lens	41 (7.8)
Traditional medicine	83 (16)
Yoga exercise	2 (0.3)

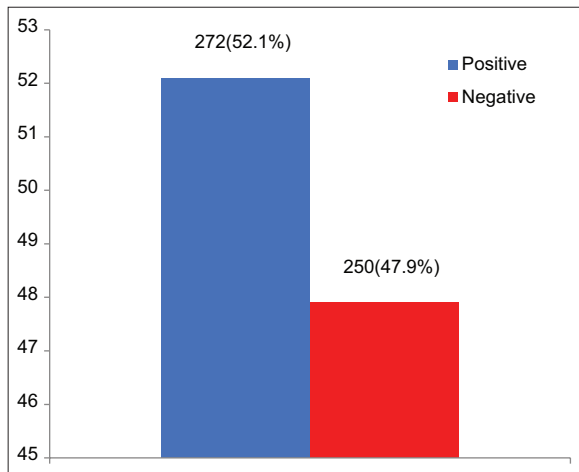


Figure 4: Profile of participants’ attitude to refractive error

Out of 522 (100%) participants, only 358 (68.6%) had heard about refractive error, while 164 (31.4%) had never heard about it. The majority of those that had heard about it thought it was caused by aging 124 (34.6%); other causative factors that were also identified by the participants are presented in Figure 1.

Of the participants, 184 (35.2%) believed that the most significant feature of refractive error is squinting, while 116 (22.3%) believed it is inability to see far objects [Table 2].

The participants’ knowledge of treatment of refractive error showed that majority of them 201 (38.5%) did not know treatment modalities, while 155 (29.6%) believed that spectacles could be used to treat refractive error [Table 2]. The profile of respondents’ knowledge of the causes, features and treatment of refractive error is presented in Figure 2.

Table 3: Attitudes of participants on refractive error

Response	n (%), n=522
What would you do if you were told you have refractive error?	
Seek medical doctor’s help	262 (50.2)
Use traditional medicine	109 (20.9)
Just pray about it	72 (13.8)
Do nothing about it	79 (15.1)
Would you wear spectacles if prescribed by the doctor?	
Yes	354 (67.8)
No	168 (32.2)
Would you allow your children to wear spectacles?	
Yes	248 (47.5)
No	274 (52.5)
What effect do you think spectacles have on the eye?	
Damage	53 (10.1)
Weaken	104 (19.9)
Sink eyeball	219 (42.0)
Improve vision	78 (15.0)
Worsen vision	26 (5.0)
Don’t know	42 (8.0)
What is your general attitude toward individuals who wear glasses?	
Visually handicapped	244 (46.7)
Intelligent	42 (8.0)
Despise	29 (5.6)
Indifferent	196 (37.6)
Bookworms	11 (2.1)
Would you marry anyone with refractive error?	
Yes	192 (36.8)
No	330 (63.2)
Do not know	0 (0)
Do you think two individuals with refractive error should marry?	
No	287 (55.0)
Yes	235 (45.0)

FGD and (IDI) of the participants on causes, features, and treatment of RE

Most of the participants had heard about refractive error, but when asked about the causes, features, and treatment, their comments:

Causes: *“it occurs when dust or foreign body such as toxins, vegetative matter enter your eyes”*

“it can result from a slap to the face” “it can occur from poorly treated eye infections”

“it is a sign of aging, it usually occurs in the elderly”

“it can result as a punishment from the gods”

In women the belief was “it results from blood entering the babies eyes in the womb when a woman bends often to do chores in pregnancy.”

Features: *“photophobia” “difficulty seeing far or near objects”*

Treatment: “it can be treated with eye drops, oral medications, proper diet and spectacles”

“the disease usually stops as one is growing”

A slight majority of the participants 262 (50.2%) reported they would seek medical doctor’s help if diagnosed of refractive error, and 354 (67.8%) also accepted to wear spectacles if prescribed by a doctor [Table 3]. Some of the participants, 109 (20.9%), reported that they would rather use traditional medicine to treat refractive error.

Majority of the participants believed that using spectacles would cause the eyeball to sink 219 (42%); this is why some of the participants were opposed to wearing spectacles or marrying someone that wears spectacles are presented in Table 3 and Figure 3, respectively. Majority of the participants 274 (52.5%) will not allow their children wear spectacles. The attitude of the participants’ toward refractive error is presented in Figure 4.

Table 4: Self-care practices among participants

Response	n (%), n=522
When last did you have your eyes examined by a doctor?	
Never	374 (71.6)
<1 year ago	20 (3.8)
≤2 years ago	31 (6.0)
>2 years ago	97 (18.6)
Have you had eye problem before?	
Yes	204 (39.1)
No	318 (60.9)
If yes, what did you do?	
Saw eye doctor	38 (18.6)
Went to a chemist	84 (41.2)
Used traditional medicine	35 (17.2)
Prayed about it	24 (11.8)
Did nothing	23 (11.3)

Table 5: Association between participants’ sociodemographic characteristics and knowledge of refractive errors

Sociodemographic factor	Total (%), n=522	Knowledge		χ^2	P
		Good	Poor		
Gender					
Male	307 (57.3)	167 (54.5)	140 (45.5)	3.19	0.08
Female	215 (42.7)	98 (45.7)	117 (54.3)		
Educational status					
Secondary or less	461 (88.3)	225 (48.8)	236 (51.2)	7.30	0.02*
Tertiary	61 (11.7)	41 (67.2)	20 (32.8)		
Occupation					
Employed	385 (73.8)	198 (51.5)	187 (48.5)	0.36	0.66
Unemployed	137 (26.2)	67 (48.9)	70 (51.1)		
Marital status					
Single	203 (38.8)	107 (52.7)	96 (47.3)	0.41	0.61
Ever married	319 (61.2)	159 (49.8)	160 (50.2)		

χ^2 =Chi-square values on the test of association between the sociodemographic characteristics and knowledge of refractive errors. *P<0.05

Table 6: Association between participants’ sociodemographic characteristics and attitude toward refractive error

Characteristics	Total (%), n=522	Attitude		χ^2	P
		Positive	Negative		
Gender					
Male	307 (58.8)	160 (52.1)	147 (47.9)	0.001	0.99
Female	215 (41.2)	112 (52.1)	103 (47.9)		
Educational status					
Secondary or less	461 (88.8)	219 (47.5)	242 (52.5)	33.47	0.00*
Tertiary	61 (11.7)	53 (87.6)	8 (12.4)		
Occupation					
Employed	385 (73.8)	192 (49.9)	193 (50.1)	2.92	0.08
Unemployed	137 (26.2)	80 (58.4)	57 (41.6)		
Marital status					
Single	203 (38.9)	115 (56.7)	88 (43.3)	2.84	0.09
Ever married	319 (61.1)	157 (49.2)	162 (50.8)		

χ^2 =Chi-square values on the test of association between the sociodemographic characteristics and attitude toward refractive errors. *P<0.05

Table 7: Associations between participants’ sociodemographic characteristics and self-care practices on refractive errors

Characteristics	Total (%), n=522	Self-care practice		χ^2	P
		Good	Poor		
Gender					
Male	307 (58.8)	29 (9.4)	278 (90.6)	0.08	0.76
Female	215 (41.2)	22 (10.2)	193 (89.8)		
Educational status					
Secondary or less	461 (88.8)	37 (8.0)	424 (92.0)	13.61	0.00*
Tertiary	61 (11.7)	14 (23.0)	47 (77.0)		
Occupation					
Employed	385 (73.8)	44 (11.4)	341 (88.6)	5.74	0.03*
Unemployed	137 (26.2)	7 (5.1)	130 (94.9)		
Marital status					
Single	203 (38.9)	15 (7.4)	188 (92.6)	2.13	0.14
Ever married	319 (61.1)	36 (11.3)	283 (88.7)		

χ^2 =Chi-square values on the test of association between the sociodemographic characteristics and self-care practices on refractive errors. *P<0.05

Table 8: Influence of knowledge of refractive error on attitude and self-care practices

Characteristics	Total (%), n=358	Knowledge		R ²	χ^2 , (P)
		Good	Poor		
Self-care practice					
Good self-care	51 (14.2)	33 (64.7)	18 (35.3)	0.164	34.15 (0.00*)
Poor self-care	307 (85.8)	72 (23.4)	235 (76.6)		
Attitude					
Positive attitude	272 (76.0)	226 (83.0)	46 (17.0)	0.404	112.50 (0.00*)
Negative attitude	86 (24.0)	18 (21.2)	68 (78.8)		

R²=Regression coefficient which shows the extent of influence of knowledge on self-care practice and attitude toward refractive error. The Chi-square (χ^2) values show if the extent of influence is significant or not, *P<0.05

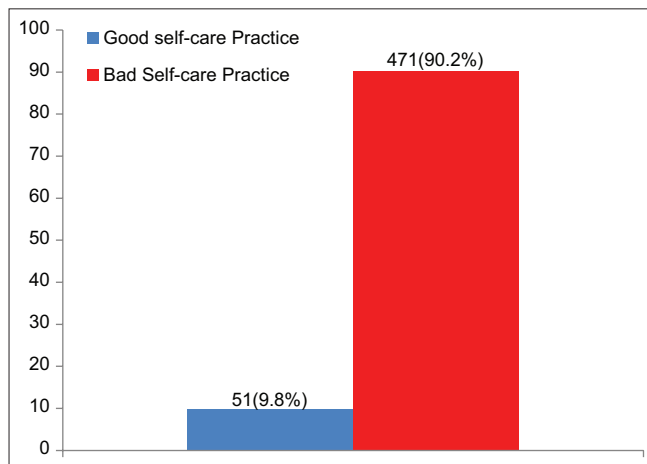


Figure 5: Profile of participants’ self-care practice

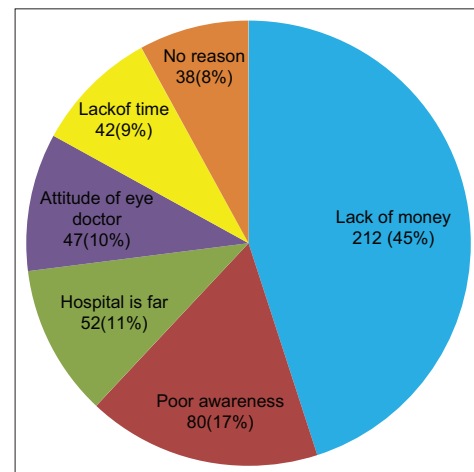


Figure 6: Reasons for poor self-care practices among participants (n = 471)

FGD and (IDI) of the participants attitude toward RE

The attitude of the participants toward individuals with refractive error is presented below:

“They are visually handicapped individuals but with time the ailment will stop”

“Two individuals with refractive error can marry if they want, why not”

“love is blind and so they should marry”

“If they marry they will spend most of their money on treatment”

On effect of spectacles on eyeball:

“spectacles sink the eyeball, I am proof of that, can’t you see my eyeball.”

Majority of the participants 374 (71.6%) never visited an eye doctor, while 97 (18.6%) had their eyes examined over 2 years ago. The self-care practices of the participants are shown in Table 4. Many of the participants who had eye problem before went to a chemist for treatment 84 (41.2%). Majority of the participants 471 (90.2%) had bad self-care practice [Figure 5]. The major barrier to uptake of refractive error services identified by participants was financial difficulty 235 (45%) and poor level of awareness of the benefits of such services 89 (17%) [Figure 6].

FGD and (IDI) of the participants self-care practices on RE

Most of the participants had poor self-care practice as shown in their responses; some even regard eye care as a “luxury.”

“I have never seen an eye doctor before, why would I when there is nothing wrong with my eyes”

“The distance from my house to the eye Centre is far”

“I will only go if an outreach is being organized and treatment is free”

“I cannot afford such luxury”

Lower educational status significantly ($p = 0.02$) associated with poor knowledge while gender, occupation, and marital status did not show any significant association with participants knowledge of refractive error [Table 5]. Lower educational status significantly ($p = 0.001$) associated with poor attitude toward refractive error, but gender, occupational status, and marital status did not show any significant association with attitude of participants [Table 6].

Good self-care practice on refractive error was significantly associated with educational status and being employed. Gender and marital status had no significant association with good self-care practices among the participants [Table 7]. Participants with good knowledge were significantly ($p < 0.05$) more likely to have good attitudes and good self-care practices on refractive error [Table 8].

DISCUSSION

The demographic profile of the participants in this study showed that they comprised more males than females with an age range of 18–83 years. This is similar to the Pakistan community-based study^[14] where participants were mostly males and had wide age distribution. A study^[10] in India also showed the same male preponderance but differed in the age range of participants who were much younger.

Majority of participants 349 (66.9%) had some level of formal education, while 173 (33.1%) had no formal education. They were mostly farmers, artisans, and traders, and the majority was married 319 (61.1%). The observed sociodemographic characteristics were similar to those in a previous study in Pakistan^[14]; however, they contradicted those observed in a study done in India where most of the respondents were university graduates who were yet to be married.^[11]

The fact that refractive error is a correctable cause of visual impairment cannot be overemphasized. The level of awareness of people about refractive error varies in different communities and countries; 69% of our study participants were aware of refractive errors. This differed from an earlier study in Benin, where 68% of the respondents had not heard about refractive errors.^[13] The increased awareness in the present study could be attributed to the growing trend in outreaches carried out in the study area where corrective lenses were usually given freely to them. However, this did not translate to good knowledge; poor knowledge of the causes, features, and treatment of refractive error was observed in 54.8% of our study participants; this agrees with reports from previous studies in Pakistan^[14] and Singapore^[15] where respondents had poor knowledge of refractive error. Many of the participants 177 (34%) in the present study thought that aging was the major cause of refractive error; this differed from the findings of previous studies in India^[10] and Nairobi,^[12] where 68% and 48% of the participants, respectively, believed that malnutrition was the major cause of refractive error. The erroneous association of age with refractive error in the study population was further strengthened by the FGD as participants explained that old people were the ones in need of spectacles for reading; they believed that presbyopia is synonymous with refractive error, and this further confirms the poor knowledge of refractive error observed in the quantitative part of the study.

Most of the participants believed that spectacles were the only corrective measure and had no knowledge of other corrective measures such as contact lenses and surgery. This is similar to reports from earlier studies in Benin^[13] and India^[10] where there was remarkably poor knowledge of other forms of treatment but contradicts report from a previous study in Abuja^[16] where good knowledge of other forms of treatment was reported. This disparity could be attributed to the fact that ours is a rural community-based survey study, whereas that of Abuja was a hospital based study in an urban environment. The poor knowledge of refractive error found among the participants was further strengthened by the FGD where those who have heard about refractive

errors on further interrogation on causes, features, and treatment lacked adequate knowledge.

Many of the participants in this study in spite of their willingness to seek doctor's help when told they had refractive error may not be willing to use spectacles, 42% of them thought that spectacles would cause their eyeballs to sink, and 46.7% viewed those that wore spectacles as visually handicapped. This poor attitude toward the use of spectacles is similar to that obtained in an earlier study in Benin^[13] where individuals that wore spectacles were perceived as visually handicapped, indeed 67% of their respondents agreed to wear spectacles only as a last resort.^[13] Some of the participants in the present study (32.2%) did not agree to wear spectacles even when prescribed by a doctor; this also agrees with the findings in previous studies in China^[17] and Pakistan^[14] where negative attitude toward the use of spectacles was reported; indeed as high as 69% of the respondents in Pakistan felt that spectacles will worsen their vision. FGD and IDI further strengthened this negative attitude toward the use of spectacles as a participant referred to herself as proof of sunken eyeball; some participants also based their belief on personal experience with individuals who increasingly wore thicker spectacles as they advanced in age. Poor attitude was also observed in the FGD where some of the participants erroneously believed that spectacles should only be used for some time and dropped afterward; they based their belief on events that happened around them, they claimed that their relations who were using glasses earlier in life stopped using them when they grew up and their sight "*became better.*"

The psychosocial impact of refractive error was clearly expressed by the participants in the present study; 63.2% of the respondents rejected marriage to someone with refractive error and 55% disapproved marriage between two individuals with refractive error. Their major reason was that the children from such marriages will inherit the disease and may go blind early in life. This view supports those expressed by respondents in two previous studies in Pakistan^[14] and India,^[10] where many of them did not support marriage between two individuals with refractive error. The high percentage of marriage disapproval to those with refractive error in our study could be attributed to ignorance and cultural beliefs and suggests the need for urgent public enlightenment program in the community.

In the FGD, some participants believed females would not be able to get husbands if they were already using spectacles at a young age. This is similar to the findings in the Pakistan study^[14] where spectacles were described as cosmetic blemish. Some of the participants also felt

that use of spectacles would enhance the intelligence in children as it would cause them to read more.

Self-care practice among the participants in this study was poor (90.2%). Most of the participants had never gone for eye examination in the hospital; majority of those who had eye problems in the past went to chemist rather than hospitals for treatment. The poor self-care practices in this study were attributed to financial constraints, poor awareness of the need for, and the benefits of regular eye examination. Other factors that might have contributed to the poor self-care practice were lack of proximity of an eye specialist hospital to the community (there is no existing eye health facility in the area or its neighboring communities) and the bureaucracy and attitude of eye care providers; many of those who had gone for eye examination claimed they spent the whole day in the hospital and that the nurses and doctors were not nice to them. This poor attitude of eye care providers was also reported in an earlier study in Pakistan.^[14]

Focus group discussions further confirmed the major reason for the observed poor self-care practice was affordability.

CONCLUSION

Blindness resulting from refractive error is a substantial public health problem in most parts of the world, but it has not received its much deserved attention in southeastern part of Nigeria. Its psychosocial impact was felt in majority of the participants in Amorji community resulting in poor knowledge and poor self-care practices on refractive errors. However, positive attitude toward refractive errors was observed in many of the participants. Educational status of the participants associated with their knowledge, attitude, and self-care practices.

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Conflicts of interest

There are no conflicts of interest.

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