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Psycho-Cognitive Predictors of Eye Healthcare Seeking Behaviours among Secondary School Students in South-West Nigeria

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Abstract

Purpose: Poor eye healthcare seeking behaviour remains a global challenge among youth populations, especially in sub-Saharan Africa. This has further impeded global efforts in eliminating avoidable causes of blindness among at-risk individuals and directly accounts for poor outcomes in their quality of life and the potentials of their contribution to economic development. This study sought to investigate the psycho-cognitive predictors of eye healthcare seeking behaviours of secondary school students in a semi-urban community of south-west Nigeria.

Methods: This was a cross-sectional survey design that adopted a multistage sampling technique to collect data in respect of demographic characteristics and psycho-cognitive disposition of 422 consenting students attending eight secondary schools in Ikenne LGA, Ogun State. A self-administered 57-item validated instrument was used for data collection. Data collected were analyzed using descriptive statistics of frequency, tables, means, standard deviation and multiple regression with statistical significance at 5% level.

Results: Demographics of the respondents revealed that 44.3% were between the ages of 15 and 17 while 56.4% of the respondents were female. Psycho-cognitive disposition of respondents comprising knowledge of eye care, attitudinal disposition towards eye care were significant predictors ($p \leq .0001$), while perceived threat/susceptibility to eye infections was also a significant predictor ($p = .017$).

Conclusion: The eye healthcare seeking behaviours of secondary school students in the study remained poor. Quality eye health education on good ocular hygiene and promotion programmes need to be conducted for the students to increase their eye healthcare seeking behavior.

Keywords: Eye healthcare seeking, blindness, cognitive factors

Introduction

An individual's use of existing eye care services is influenced by a number of factors including social, psychological, cognitive, and cultural factors, and these factors all interplay to determine the eye care seeking behavior. According to the World Health Organization (WHO) the utilization of eye care services globally was 18% in 2012[1], while in

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Nigeria the rate of utilization was reported to be below 25%, as against the set target of 90% [2] . To avoid irreversible vision loss in school children, eye care services are to be used regularly as ocular anomalies can be prevented if detected early and treated. Globally 253 million individuals have visual impairment[3], out of which 19 million are children[4], and from this estimate 1.4 million children below 15years are blind, majority of them living in developing countries like Nigeria[5]. The severity of the situation is such that it is reported that a child goes blind every minute, and 60% die within a year of going blind[6]. However, eye care services are not readily available in these countries where over 90% of these children with visual impairment reside[4], because an observed disproportion of medical personnel are located in the urban areas than in the semi-urban and rural areas.[7]

The student-friendly school environment is important as it ensures that every student is physically safe, emotionally secure, and psychologically enabling[8]. Therefore, if visual impairment is observed in a student and steps are not taken to ensure correction, it can impact negatively on their educational, physical, and mental development[4]. Defective vision can increase the threat of exposure to injury at home, in the school premises, and road traffic accidents, and if left uncorrected, it can induce psychological stress, and such students may have problems with social integration and limitation of job prospects leading to a reduced quality of life[4]. It is against this background that WHO gave childhood blindness high priority in its VISION 2020-The Right to Sight initiative, as many causes of childhood blindness are avoidable or treatable[4]. School-based eye care interventions such as screening for refractive errors have been recommended because it allows for early detection of eye diseases and prevention of blindness[9].

Various studies have revealed reasons for poor eye healthcare seeking behavior of individuals as well as students, and they include low education of parents, lack of awareness of the eye conditions, lack of knowledge and perception of the seriousness of eye disease, the fear of adverse outcomes from treatment, the use of traditional medicine, lack of knowledge of teachers to identify students with visual problems, negative attitudes towards services and difficult communication between providers and patients[10-14].

Psycho-cognitive factors which constitute a combination of knowledge of good eye care and attitudinal disposition towards eye care, as well as the perceived susceptibility/threat of eye infections are factors that can determine or influence the eye healthcare seeking behavior of students in secondary schools. In Tanzania, the training of

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Vision Champions (VC) among students by a group of eye health professionals, helped to increase the knowledge level of good eye care in their community[15], while other studies have reported that increasing the knowledge level of parents on good eye care has a direct relationship to the eye care practices of their children[6,12]. Another study reported that secondary school students did not wear the spectacles given to them because of the prescribing practices of the local opticians, while some preferred traditional or alternative treatments[16]. The stigma associated with spectacle wear is another factor why students with visual complaints do not come to the clinic, as some of them feel that they are too young to wear spectacles or that the glasses will further damage their vision, even though this eye care device will improve their vision[17-18]. The perceived threat of blindness and its negative impact on the education of the student is a propelling motive for seeking eye healthcare[19].

A study conducted in the USA reported poor eye healthcare seeking behavior among children from less affluent families[20], while another study conducted in South Korea reported that the use of eye care services among children was 61.1%[21]. There is paucity of studies reporting eye healthcare seeking behavior among secondary school students in Nigeria, however, studies have been done on the eye healthcare seeking behavior of parents in relation to their children in primary schools and these studies reported poor healthcare seeking behavior of the parents for their children with visual complaints[5,22]. Therefore, this study seeks to identify the psycho-cognitive predictors which determine the eye healthcare seeking behavior of secondary school students in a semi-urban community. This research has been developed guided by the theoretical premise selected from the Social Learning Theory (SLT) and the Health Belief Model (HBM). Therefore, it is well grounded in behaviour theories and results derived will have high predictive value for making recommendations on the best strategy for developing educational and intervention programmes to effectively maintain good ocular hygiene for secondary school students.

Material and Methods

This study was a cross-sectional survey which was conducted in Ikenne LGA of Ogun state, Nigeria. The Local Government area has a total of 37 secondary schools, out of which 8 schools (4 public and 4 private schools) were selected using multi-stage sampling methods. Purposive sampling was employed to select two secondary schools each (public and private) from four of the five political wards in Ikenne LGA, while convenience sampling was used to select the public and private secondary school from each ward based on size of the number of students in the school. Finally, simple random sampling proportionate to size of schools was used

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to determine the number of students from each school who will participate in the study.

Computed sample size of 422 respondents was determined for the study but only 411 respondents aged 9-19 eventually participated in the study. A 57-item questionnaire with weighted scores 1 for the wrong choices and 4 for the right choices, with Cronbach alpha score of 0.743, was used to collect data from the respondents, assisted by 4 research assistants, after clarification of the purpose of the study and consent secured from the school principal, teacher in charge school-based research and the student. Data collected were analyzed using descriptive statistics of frequency distribution, means, standard deviation and the multiple regression analysis. All test of significance was performed at $P \leq 0.05$ using the Statistical Package for Social Sciences (SPSS) version 23. Ethical Approval was obtained from the Babcock University Health Research Ethics Committee (BUHREC 816/19) before the research was conducted.

Results

Findings from the study showed that 182 (44.3%) respondents were between the ages of 15 and 17. More than half of the respondents (56.4%) were female. Most of respondents were Christians (78.6%). More than half of the respondents were from the Yoruba tribe (66.2%). *(See Table 1)*

Knowledge regarding good eye care

Results of responses regarding knowledge about eye health-care of the respondents showed majority (99%) agreed that eating of foods rich in Vitamin A is good for the eye, while majority (79.5%) of the respondents similarly agreed that information on eye care could be obtained from the mass media. Most of the respondents (97.1%) agreed that rubbing the eye frequently was harmful. All the respondents (100%) agreed that the hospital is the only appropriate place to seek for eye care. Most of the respondents (98.1%) agreed that they would seek eye care once they notice symptoms of infection or pain. It appears that responses to all items are good. (Table 2)

Attitudinal Disposition of Respondents

More than half of the respondents (86.8%) agreed that they avoid playing with sharp objects in order to keep their eyes healthy. However, about half of the respondents (55%) did not agree that eye diseases could be inherited from their parents. Also, more than half of the respondents (75.9%) disagreed that they were not afraid of getting eye infections from their friends or roommates (*See Table 3*). Almost all the respondents (96.1%) agreed that they encourage their friends with eye infections to go to the hospital. More than half of the respondents (85.7%) agreed that seeking eye care early would avoid future complications. However, about half of the respondents (54%) disagreed with the statement that they feel shy being seen to wear spectacles. Finally, more than half of the respondents (78.3%) did not agree that there was no benefit going for annual eye checkups (Table 3).

Perceived Threat/Seriousness regarding eye infection

Almost all the respondents (94.1%) agreed that eye diseases left untreated could lead to blindness. Also, almost all the respondents (92.2%) agreed that their education could be affected if they go blind (Table 4). Most of the respondents (87.8%) also agreed that blindness could be a disability. Eye diseases are

seen more in the elderly was agreed by 70.3% of the respondents. However, 61.1% of the respondents disagreed that those wearing eyeglasses could go blind in the future. Majority of the respondents (95.9%) agreed that when they notice issues with their eyes, they inform their parents or teachers (Table 4). Most of the respondents (84.7%) agreed that they were willing to go to the eye clinic for annual checkup. Majority of the respondents (94.5%) expressed confidence that eating foods rich in Vitamin A can maintain good vision. Finally, more than half of the respondents (89.8%) expressed confidence that they would use eye drops/glasses given to them in the eye clinic (Table 4).

Summaries of Descriptive Statistics for Constructs in the Study

The items operationalizing the constructs in the study were transformed to weighted aggregates measuring levels of cognitive factors comprising the level of knowledge of eye care and attitudinal disposition towards eye care on a 72-point rating scale. The results showed that the respondents scored a mean of 45.29±4.83 translated to a cognitive prevalence score of 62.90 % *(See Table 5)*. From the result, we can infer that the respondents had a relatively fair but not good knowledge concerning eye care and attitudinal disposition towards eye care.

The construct measuring the eye healthcare beliefs constituting the perceptions of threat regarding risks of failing sight emerging from possible infections of the eye and its contribution to the eye health-care seeking behavior of the respondents was measured on a 36-point reference scale, and the results reveal a mean score of 26.74±3.53, and this figure translates to a prevalence score of 74.30% (Table 5). From this result, we can deduce that the respondents' eye healthcare beliefs are good. The construct measuring the eye health-care seeking behavior of respondents comprising eye clinic visitation, the eye care lifestyle practices and the frequency of clinic visitation was measured on a 40-point rating scale, and the results showed a mean score of 24.12±3.86, and this translates to a prevalence score of 60.30% (Table 5). From this result, we can infer that the eye health-care seeking behavior of the respondents is low.

Table 5 shows a summary of the variables, their maximum point on the scale of measure, their mean values, and percentages (as relating to the maximum points) are also reported. Criteria by previous studies[23-24] were applied which indicate that measurement scale and proportion or scores (for constructs) greater than 70% is considered high and an adequate level with respect to the variable being measured (Table 5).

Measure of Predictors of Eye healthcare Seeking Behavior of Respondents

The result shows that the respondents' age, their sex, and ethnicity were the significant demographic variables influencing respondents' eye health-care seeking behaviour at $p \leq 0.05$ and with their various signs (Table 6). The coefficient of age was positive and significant ($p \leq 0.001$). The coefficient of sex was positive (in favour of the male gender) and significant ($p=.018$). Also, the coefficient of ethnicity was positive (in favour of the Yoruba ethnic group) and significant ($p=.029$) (Table 6). The coefficient of cognitive factor was positive and significant ($p \leq 0.001$). Furthermore, the coefficient of the respondents' eye healthcare beliefs was positive and significant ($p=.017$) (Table 6).

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Table 1: Demographic distribution of respondents

Variable	Options	Frequency (n= 411)	Percentage (%)
Age	9-11	96	23.4
	12-14	114	27.7
	15-17	182	44.3
	18- 20	19	4.6
Sex	Male	179	43.6
	Female	232	56.4
Religion	Christian	323	78.6
	Islam	88	21.4
Ethnicity	Igbo	109	26.5
	Yoruba	272	66.2
	Hausa	4	1.0
	Others	26	6.3

Table 2: Knowledge on good eye care

Statements for consideration	Agree n (%)	Disagree n (%)
Eating foods rich in Vitamin A are good for the eyes	407(99)	4(1)
Information on eye care can be obtained from the mass media	327(79.6)	84(20.4)
Rubbing the eyes frequently is very harmful	399(97.1)	12(2.9)
The hospital is an appropriate place to seek for eye care.	411(100)	0 (0)
Traditional eye medications can be harmful to the eye	327(79.5)	84(20.5)
The idea of using urine to treat/ clean the eye is injurious to the eye	329(80.1)	44(19.9)
I should seek eye care once I notice symptoms of infection or pain	403(98.1)	8(1.9)
Glasses is a device for eye care	405(98.6)	6(1.4)
Conjunctivitis (Apollo) is an example of an eye infection	407(99.1)	4(1)
Washing of hands/face regularly can prevent the spread of eye infections	357(86.9)	54(13.1)
Holding a book too close to the eye can cause bad vision	323(78.5)	88(21.5)

Table 3: Respondents Attitudinal disposition towards eye care

Statements for Consideration	Agree n (%)	Disagree n (%)
I avoid playing with sharp objects in order to keep my eyes healthy	357(86.8)	54(13.2)
I believe that eye diseases can be gotten from parents	185(45)	226(55)
I am not afraid of getting eye infections from my friends/ roommates	99(24.1)	312(75.9)
I encourage my friends with eye infections to go to the hospital	395(96.1)	16(3.9)
When I seek eye care early, I can avoid future complications	352(85.7)	59(14.3)
I feel shy about being seen to wear spectacles.	189(46)	222(54)
There is no benefit going for annual eye check-ups	89(21.7)	322(78.3)

Table 4: Eye Healthcare beliefs of respondents

Statements for consideration	Agree n (%)	Disagree n (%)
Eye diseases left untreated can lead to blindness	360(94.1)	24(5.9)
My education will be affected if I go blind	379(99.2)	32(7.8)
Blindness can be a disability	361(87.8)	38(12.2)
Eye diseases are seen more in the elderly.	289(70.3)	122(29.7)
People wearing eye glasses can go blind in the future	160(38.9)	251(61.1)
I notice when I have issues in my eye and inform my parents/teachers	394(95.9)	17(4.1)
I am willing to go to the eye clinic for annual check-ups	346(84.2)	65(15.8)
I am confident that eating foods rich in Vitamin A can maintain good vision	389(94.5)	22(5.5)
I am confident to use eye drops/glasses given to me in the eye clinic	369(89.8)	42(10.2)

Table 5: Means of measured variables

Variable	Max point on scale of measure	Mean	Std. Dev	% of Max point
Cognitive Factors	72	45.29	4.83	62.90
Eye Healthcare Beliefs	36	26.74	3.53	74.30
Eye healthcare Seeking behavior	40	24.12	3.86	60.30

Table 6: Determinants of eye healthcare seeking behavior

Variable (independent)	Beta-coefficient	Std. coefficient	Std. Error	t-value	p-value
(constant)	8.846		2.958	2.991	.003
Age (years)	0.320**	.216	0.078	4.102	.000
Sex (Male =1, Female =0)	0.932*	-.017	0.392	2.381	.018
Religion (Christian =1, others =0)	0.102	.004	0.487	0.210	.834
Ethnicity (Yoruba=1, others=0)	0.889*	.064	0.407	2.186	.029
Eye Healthcare Beliefs (construct)	0.120*	-.139	0.050	-2.390	.017
Psycho-Cognitive factors (construct)	0.347**	.457	0.036	9.626	.000
R^2	0.58				
Adjusted R^2	0.54				
F-statistics	16.268**				

**sig at 1%; *Sig at 5%

Discussion

This study sought to investigate the psycho-cognitive predictors of eye healthcare seeking behaviours of secondary school students in a semi-urban community of south-west Nigeria. This study was undertaken because previous studies in the country have focused on the eye healthcare seeking behavior of parents for their children, and not from the students themselves.

Findings from the study suggest that the respondents had a relatively fair knowledge concerning eye care. Respondents believed that adequate nutrition especially with foods that are rich in Vitamin A is good for the eyes, which also corresponds with a study[25] conducted in a similar population in Kenya. Therefore, adequate nutrition is encouraged in the homes of the students, so as to reduce the prevalence of poor vision among this population.

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Also, respondents agreed that information on eye care could be obtained from the mass media, therefore, health messages regarding eye care disseminated frequently on mass media platforms like the television, radio, and even social media platforms like Facebook or twitter, has a greater chance of reaching this demographic, and this will further encourage better eye healthcare seeking behavior. This corresponds with the assertion by other studies[17,26], who encouraged that mass media including social media is a means of reaching the population with eye health-care messages.

Some of the respondents disagreed that traditional eye medications (TEM) were harmful to the eye. Most school children have developed bilateral corneal ulcers as a result of using TEM[27], giving rise to poor vision, and in some cases blindness occurs. With the poor knowledge of the harmful effects of TEM in this study population, students may experience visual impairment from its use, and the number maybe on the high side. This agrees with the findings of other studies[27-28], where respondents in these studies rarely went to the hospital and engaged in the use of TEM. Some of the respondents agreed that spectacles are an eye care device, therefore the chances that if such a device is recommended for correction of refractive error, such would be welcomed by the students as also seen in a similar study[25].The knowledge that conjunctivitis (Apollo) is an eye disease was agreed by almost all the respondents and that washing the face/eyes can prevent the spread of such infections. This reveals that the study population has an idea of some eye diseases. So, it is safe to assume that such eye infections can be identified by the respondents, and the appropriate treatment sought for. This assumption agrees with a similar study in Pakistan[29].

Majority of the respondents agreed that they avoid playing with sharp objects in order to preserve their vision. Vision loss has been attributed in some cases with the unsafe use of sharp objects like knives, sticks, etc., especially among school children. Therefore, there is a possibility that visual impairment resulting from the unsafe use of sharp objects will be limited in the study population. A study in Bangledesh also revealed that such safe practice was observed[30]. Respondents also agreed that they would encourage their friends/classmates to seek eye care if they have infections. This indicates a high level of support from peers. Peer victimisation is difficult to assess when it comes to the impact it has on a child and in some cases, the child may never disclose any information of victimisation at all. Therefore, for this trend to be absent among the respondents, it would enhance a better health seeking behavior among this study population. The effect of peer victimization in relation to eye care has been enumerated in a study[31]. However, some of the respondents reported that they feel shy being seen to wear glasses. The reason may not be far from fear of bullying by classmates or the stigma that those who wear recommended

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glasses are likely to be anti-social as seen in a study in India[32]. The implications to this trend is that if there are reasons for spectacle wear among the study population, some of them would be reluctant to wear them, and this can further affect the vision of such students and by extension, their studies will be affected.

Factors that affect respondents' beliefs towards seeking eye health-care is the fear that eye diseases left untreated can lead to blindness, and as such if blindness occurs, their education can be affected. Vision is important to advance educationally, because blindness can be a disability as agreed by the respondents. Most visually impaired students have had to drop out from school because they could not cope with the rigors of normal student life, and this led to depression and subsequent reduced quality of life. Therefore, for this study population, the knowledge of the effect of eye diseases on their education can lead to better eye health-care seeking behavior. This corroborates with the findings in other studies[19,33-34]. However, in the study conducted among undergraduates in Benin, the respondents did not believe that their education could be affected if their eye conditions were not corrected[18]. Majority of the respondents did not agree that people who wore glasses could go blind in the future. This is a misconception which is common among people and further discourages the use of spectacles. A previous study conducted in India also revealed that respondents rejected the idea of wearing spectacles for fear of going blind in the future[17]. But since some of the respondents in this study do not agree with this misconception, there is the likelihood that they may accept spectacles if prescribed.

The study revealed that respondents' eye healthcare beliefs with regards to eye care were good, as most of them expressed confidence to seek eye care as well as revealed the threats that may further influence their seeking eye care like the fear of going blind which may affect their education. However, these indices also need to be improved upon because they are influencing the respondents. Finally, respondents had a poor knowledge of eye care and attitudinal disposition towards eye care and this significantly affects their eye health-care seeking behavior. The implication is that if their knowledge of eye care is increased, their attitude towards eye care will also increase, and their eye health-care seeking behavior will be improved. This can be achieved through health education and promotion using sources like eye health-care professionals and the media. Media channels like the television, radio, phone text messages and the internet can be veritable tools to ensuring that messages on eye care reach the targeted group of individuals, and this will further improve their eye health-care seeking behavior. This agrees with the assertion in other studies[29-30,35].

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Conclusion

This study observed that behavior of seeking eye care amongst secondary school students in the area remains poor. Although the eye care beliefs were good and the knowledge level of eye care was fair, it did not positively influence respondents' eye health-care seeking behavior. Quality eye health education and promotion programmes need to be regularly conducted using media sources to increase the knowledge level and influence the attitude and beliefs positively towards eye care to further improve their quality of life.

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