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Effect of Nurse-led Education Intervention on Knowledge about Health-seeking behaviours and Willingness to Prevent Eye Problems among Residents in Ilorin

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ABSTRACT

Background: There is a growing challenge of eye health problems despite availability of treatments in communities. ***Purpose*:** Aimed to examine the effect of nurse-led education intervention on knowledge about determinants of health seeking-behaviours and willingness to prevent eye problems in Ilorin-East. ***Methods*:** A multi-stage sampling technique was adopted which included convenient sampling, systematic sampling and purposive sampling methods to select 220 respondents among residents of Ilorin East Local Government Area. A researcher designed questionnaire based on research objectives was used for data collection with a reliability index of 0.70. The questionnaire was administered before and after interventional sessions and the research questions analyzed using percentage means and standard deviations, while the three research hypotheses were tested using paired-sample t-test at 0.05 significance level. ***Results*:** Findings showed enhanced post-intervention percentage mean scores on knowledge about eye problems (86.37%), determinants of risk factors to eye problem (71.14%) and health-seeking behaviours on willingness to prevent eye problems (82.18%) as against pre-intervention percentage mean scores; 62.16%, 58.20%, and 53.29% respectively. ***Conclusion:*** The three hypotheses tested were rejected at $\alpha = 0.05$. The study concluded that nurse-led eye health education intervention has a significant impact on knowledge level, determinants of risk factors to eye problems and health seeking behviours on willingness to practice preventive measures on eye health problems among residents. It is however recommended, among others, that there should be an integration of eye health education into primary health care services to ensure consistent and sustainable health message dissemination to communities. ***Implications for Nursing***: This study provides an opportunity for nurses to have base-line knowledge of residents 'about eye problems, health seeking behviours towards preventing eye problems. Its findings will guide nurses in planning eye care outreach program implementation using nursing health education interventions on various eye health conditions in communities.

Keywords: Access to eye care services, Determinants of eye health problems, Effect of nursing health education, Health-seeking behaviours, Ilorin East Local Government Area.

What does this paper add?

1. This study showed a significant increase in knowledge level of residents about eye health problems, determinants of risk factors to eye problems and willingness to practice preventive measures against eye disease after nursing health education.
2. This study provides opportunities for nurses and health institutions to plan and implement eye care outreach programs using nursing health education interventions on various eye health problems in communities.

Introduction

Eye health problems have been a neglected area of health in both developed and developing world countries resulting from many countries giving less attention to the treatment of various eye health conditions when compared with other areas of health. Yasmin et al. (2022) observed that worldwide, 2.2 billion people have vision impairment, out of whom 1.056 million people have visual impairment that could have been prevented and treated. The majority (55%) of people with vision impairment are women and girls, who live in low- and middle-income countries where access to eye health services is limited by a range of socio-economic and cultural barriers (Yasmin et l., 2022). Diseases of the eye, which cause blindness and impaired vision, are some of the major public health issues in developing countries like Nigeria. Evidence has shown that one of the major challenges in pursuing universal access to eye healthcare services is the low acceptance level of offered eye treatments by the potential beneficiaries. Good vision affects so many areas of life and this should be taken seriously, wherever possible, as a matter of fundamental human right (Allen & Kim, 2024; Gail et al., 2012).

The majority of visual impairment cases are caused by problems that are often treatable or preventable, such as cataract, glaucoma, refractive errors, harmful traditional practices, trachoma, and childhood blindness. However, a large proportion of blindness cases may result due to delayed in clinic visits, limited access to eye health services, ignorance of the significance of routine eye examinations, lack of knowledge on the eye health problems, and the presence of risk factors, like diabetes, high myopia, and blood hyper-tension. Regarding these eye conditions, a study reported that limited knowledge about eye health, financial constraints, gender disparities, transportation issues, cultural beliefs, insufficient education regarding the importance of regular eye examination, and ignorance of risks of blindness or vision loss constitute risk factors to access eye health care and could be determinants of most eye conditions (Ezinne et al., 2022).

Eye health education interventions according to Owusu-afriyie et al. (2022) encompass a range of activities, which include individual counseling, group education sessions, community outreach programmes, and utilization of multi-media resources to disseminate information about eye diseases, preventive measures, available treatments, and the importance of regular eye screenings. These interventions are targeted toward meeting diverse eye health needs of individuals in the community, such as infections, like conjunctivitis and trachoma, attitudinal practices, such as personal hygiene practices, avoiding self-medication, and the need to seek timely care for symptoms, such as redness, discharge, or eye pain. Other areas of concern according to studies are literacy levels, cultural backgrounds, occupation, religion, waiting time, age, gender disparities and socio-economic status which are factors found to be responsible for delay in seeking eye health care services (Parfitt et al., 2019). Enas et al. (2024) cited in a similar study that health education intervention during childbirth was found effective when tailored through pegnant women knowledge about three stages of delivery. The study reported a significant improvement in knowledge level of pregnant mothers after health education.

Despite the availability of treatments and preventive measures for common eye problems, such as cataracts, glaucoma, and refractive errors, a large proportion of the population remains unaware of these problems and services. Knowledge of eye health problems and determinants of eye conditions remains a significant challenge in many parts of Nigeria, especially in Ilorin, and if these disparities persist, they may lead to preventable vision impairment and blindness among residents of Ilorin East Local Government Area (LGA). The poor knowledge level about eye problems and its determinants among residents may be responsible for delay in accessing eye health care services which will relatively affect individual and family daily life activities. Addressing these challenges requires nursing

health education interventions that will not only educate the community members about eye health problems, but also address the barriers to taking measures in preventing eye health conditions.

However, it is observed that limited studies have been conducted specifically on the health education interventions on knowledge of eye health and determinants of risk factors to eye health conditions among residents of Oke-Oyi, Ilorin East LGA. Based on these observed gaps, this study aims to examine the effect of nursing health education interventions on knowledge about determinants of risk factors and health-seeking behaviours towards willingness to practice preventive measures among residents of Oke-Oyi, Ilorin East LGA, Kwara State, Nigeria.

Research Questions

1. Is there any significant change in knowledge level of eye health problems before and after eye health education interventions among adult residents of Ilorin East LGA?
2. Is there any significant change in knowledge level of residents in Ilorin East LGA about determinants of risk factors to eye health problems before and after eye health education interventions?
3. What is the health-seeking behavior on willingness to practice preventive measures about eye health problems before and after the health education interventions among residents of Ilorin East LGA?

Research Hypotheses

$H0_1$: There is no significant change in knowledge level of eye health problems before and after health education interventions among residents of Ilorin East LGA.

$H0_2$: There is no significant change in the knowledge level of residents in Ilorin East LGA about determinants of risk factors to eye health problems before and after eye health education interventions.

$H0_3$: There is no significant difference in health-seeking behaviors towards practicing eye health problems preventive measures before and after health education interventions among residents of Ilorin East LGA.

Methodology

This study adopts a multi-stage sampling methods, whereby a convenient sampling technique was used to first select four political wards from the twelve existing wards in the LGA. This was followed by a systematic sampling procedure to select 55 households from the four political wards. After the conduct of house numbering per street on every 5^{th} household, 4 adult participants were purposively selected, giving a total number of 220 participants. This procedure was carried out for the period of two weeks with the assistance of seven trained research assistants. The selected sample was used for both pre-test and post-test intervention sessions with the aim to assess the effect of nurse-led education on knowledge about eye problems, determinants of risk factors and health-seeking behaviours on willingness to practice preventive measures on eye health problems among residents of Ilorin East LGA. A researcher-designed 34- item questionnaire guided by study objectives was used for data collection. The questionnaire was divided into three sections, (A-C); Section A was designed to provide information on respondents' knowledge level about eye health problems, while section B was designed to gather information on level of knowledge about determinants of risk factors to eye health problems, and section C aimed to explore the health-seeking behaviors of the respondents on willingness to practice preventive measures on eye health problems. Section A was designed in a "Yes" or "No" format, while the other two sections were presented in modified Likert-scale type format and scored as: Strongly Agree - 5, Agree- 4, Not Sure - 3, Disagree - 2 and Strongly Disagree -1.

The instrument validity was determined based on the study objectives and was constructed considering the variables, such as knowledge level, determinants of risk factors and willingness to prevent eye health problems, while the internal consistency was ascertained by the instrument reliability through a test re-test method and Cronbach's alpha coefficient used to analyze the results obtained from a pilot study conducted on a population similar in characteristics to the study population and the value of 0.70 was obtained, indicating the reliability of the instrument.

Data Collection

Application for ethical approval and a copy of the proposal for this study were submitted to the Research Ethical Committee and an approval letter with registration number; UERC/CS/318 was given for the conduction of this study from the Local Government Authority (LGA)

management. The community leaders of selected study areas were given the approval letter obtained from the LGA for their consent to conduct this study. The participants were approached; purpose and procedure of the study were explained as they were assured of their safety and confidentiality throughout the period of the study. The data collection processes were in three phases; pre-intervention, intervention and post-intervention phases.

Pre-intervention Phase

On the first week of pre-intervention session, an advocacy visit was paid to leaders of the communities in the selected wards and a letter of approval from the local government authority management was presented to the residents for their permission and approval to participate in the study. The research assistants comprising of two trained ophthalmic nurses and seven registered nurses were selected and trained for two days, based on the study objectives and procedure for data collection explained to them. The materials for the eye-health educational protocols and orientation format were developed from the ophthalmic nursing manual guided by specific objectives of the study on eye health problems. On the second week, the residents sampled for the study were assembled at the community leader main hall at 10 am, and an introduction of the research team was made and the purpose of the study was explained for the residents' informed consent.

The participants were assured of safety and confidentiality and then, pre-test questionnaires were administered on the same day to the participants. The 34 question items were prepared in English language for residents who can read and respond in English, while the interpretation was made in Yoruba language which is the major language spoken in the study area for those who could not understand English language, but were included in the sample. The responses from the respondents were filled accordingly with the help of the research assistants. During this phase, educational materials, such as posters, handbills, projectors, screens and other educational materials related to the study objectives, were designed to facilitate educational interventions. The exercises in pre-intervention phase took a period of one week.

Intervention Phase

On the first day of the intervention phase, the trained research assistants were divided into two groups and located in hall A and hall B. In these halls, participants were briefed on the purpose of the study at 10 am on each day of the intervention sessions for the period of four weeks in the same halls used for the pre-intervention session. Three (3) 45 minutes to 1 hour health education intervention sessions were conducted to each group per day using several combinations of health education intervention methods. These methods of health education used during the intervention phase include lecture, interactive, and discussion methods, as well as practical demonstration and teaching methods. The participants were allowed to discuss freely and ask questions as clarifications were made during the intervention sessions.

The intervention focused on a comprehensive health education protocol developed based on the definition of eye health and eye conditions, awareness of common eye problems, their causes, signs and symptoms, treatment options and preventive measures, available eye health care treatments, understanding some risk factors that could mitigate preventive measures to eye problems. Strategies were also used to motivate the participants to make informed decision towards taking measures to prevent eye health problems and seek help in available eye care services in their respective communities.

Post-intervention Phase

The post–intervention session was conducted on the 13th week after the intervention phase to evaluate the effectiveness of the interventions on the knowledge about risk factors and the need for prevention of eye health conditions. The same set of questionnaires used during the pre-intervention phase was re-administered to the participants to measure the effect of the interventions on their knowledge and willingness to practice preventive measures on eye health problem in the LGA.

Data Analysis

The completed questionnaires administered during the pre- and post-intervention sessions were analyzed using descriptive statistics for demographic variables on eye health problems and presented as percentage, mean and standard deviation tables, as well as for categorical characteristics of the respondents. Inferential statistics were used to test the null hypotheses using paired-sample t-tests to compare pre-and post-intervention on knowledge about risk factors and their health-seeking

behaviors towards willingness to practice preventive measures among participants. Results were considered at 5% level of significance ($\alpha = 0.05$). The points scored by respondents on knowledge level about risk factors and willingness to practice preventive measures were summarized using percentage mean scores from their responses.

Results

The mean age of respondents in this study was 55years with females constituting the majority (60.5%) of the respondents. Quite a large number of residents are Muslims (94.5%) and 33.5% of them attended either secondary or tertiary education as against 66.5% with primary or non-formal educational qualifications, but are self-employed.

Research Question 1: What is the level of knowledge about eye health problems before and after the health education interventions among adult residents of Ilorin East Local Government Area?

Table 1. Percentage mean response and standard deviation on knowledge about eye health problems

Knowledge About Eye Health Problems	Intervention (Pre-and Post-)	n1 =220 n2 = 220	$\%\bar{X}$	SD	SE
Do you understand what is meant by eye health?	Pre-intervention	220	58.21	9.23	0.6223
	Post-intervention	220	91.33	5.22	0.3519
If yes, are the following problems correct about eye health problems?	Pre-intervention	220	53.17	13.06	0.8805
	Post-intervention	220	71.08	4.68	0.3155
Cataract	Pre-intervention	220	56.27	23.41	1.5783
	Post-intervention	220	96.03	11.22	0.7565
Glaucoma	Pre-intervention	220	52.66	16.59	1.1185
	Post-intervention	220	89.15	6.32	0.4261
Refractive errors	Pre-intervention	220	47.92	21.99	1.4826
	Post-intervention	220	73.01	7.01	0.4726
Diabetic retinopathy	Pre-intervention	220	51.11	18.21	1.2277
	Post-intervention	220	65.31	14.55	0.981
Age-related macular degeneration	Pre-intervention	220	57.91	12.66	0.8535
	Post-intervention	220	78.22	3.85	0.2596

Field survey, 2024.

Table 2. Percentage mean response and standard deviation on risk factors to eye problems

Risk Factors to Eye Problems	Intervention (Pre-and Post-)	n1=220 n2 = 220	$\overline{\%\bar{X}}$	SD	SE
Are you aware of that there are risk factors to eye problems?	Pre-intervention	220	63.47	6.22	0.4193
	Post-intervention	220	79.10	4.14	0.2791
Sources of your information about eye healthcare services	Pre-intervention	220	68.36	9.01	0.6075
	Post-intervention	220	81.66	3.21	0.2164
Do you know that glaucoma can be inherited?	Pre-intervention	220	59.23	6.25	0.4214
	Post-intervention	220	67.12	5.19	0.350
Do you know that uncontrolled blood sugar can cause eye problems?	Pre-intervention	220	49.83	5.28	0.356
	Post-intervention	220	71.29	3.01	0.2029
Are you aware of that lifestyles (e.g. smoking, alcohol intake, poor diets) can cause eye problems?	Pre-intervention	220	58.38	4.33	0.2919
	Post-intervention	220	68.22	3.25	0.2191
Eye infections	Pre-intervention	220	49.20	4.29	0.2892
	Post-intervention	220	67.91	3.28	0.2211

Field survey, 2024.

In Table 1, there is an increase in the knowledge level with post-intervention mean percentage of 91.33% over the pre-intervention mean percentage of 58.21% on eye health problems among residents of Ilorin East LGA. The respondents' pre-intervention base-line knowledge about various eye health problems shows a percentage mean of 53.17%, but subsequently improved to 71.08% after the intervention. Similarly, their

knowledge about other eye problems was also enhanced following the post-intervention phase; thus, cataract scored (96.03%), glaucoma (89.15%), refractive errors (73.01%), diabetic retinopathy (65.31%) and age-related macular degeneration (78.22%) post-intervention percentage means. These results imply that eye health education interventions in this study significantly enhanced knowledge level of residents of Ilorin East LGA about eye health problems after post intervention sessions.

Research Question 2: What is the level of knowledge about determinants of risk factors to eye health conditions before and after eye health interventions among residents of Ilorin East LGA?

Research Question 3: What are the health-seeking behaviours towards willingness to practice preventive measures of eye health problems before and after health education interventions among residents of Ilorin East LGA?

Table 3. Percentage mean response and standard deviation on preventive measures regarding eye problems

Preventive Measures Regarding Eye Problems	**Intervention (Pre-and Post-)**	**n1=220 n2 = 220**	**%$\bar{X}$**	**SD**	**SE**
Do you practice preventive measures for eye health willingly?	Pre-intervention	220	61.10	5.18	0.3492
	Post-intervention	220	83.40	3.32	0.2238
Have you ever willingly gone for eye check-up?	Pre-intervention	220	65.12	5.37	0.3620
	Post-intervention	220	77.25	4.20	0.2831
How often did you go for eye check-up willingly?	Pre-intervention	220	33.02	14.51	0.9783
	Post-intervention	220	51.04	9.33	0.6290
Did you visit various eye health care center for services in your area?	Pre-intervention	220	65.70	3.96	0.2669
	Post-intervention	220	70.53	3.12	0.2104
Which of the following eye health care services have you willingly visited for care?					
Refraction for eye glasses	Pre-intervention	220	56.95	4.03	0.2717
	Post-intervention	220	65.61	3.46	0.2333
Cataract surgery	Pre-intervention	220	31.11	11.72	0.7902
	Post-intervention	220	59.77	10.11	0.6816
Glaucoma treatment	Pre-intervention	220	67.71	6.33	0.4268
	Post-intervention	220	82.99	5.29	0.3567

Field survey, 2024.

Table 3 reveals both pre-and post -intervention health-seeking behaviours of respondents' willingness to practice preventive measures on eye health problems with up shift in knowledge level from 61.10% to 83.40% in mean percentage scores following post intervention sessions. Respondents' willingness to go for eye check-up was enhanced to a percentage mean score of 77.25%. Despite the significant increase in knowledge level of respondents following eye health education interventions, only 51. 04% of them claimed to often go for regular eye check-up screening. A large proportion of them (81.66%) are willing to seek information about eye problems from health workers after the intervention. On visiting various eye health care centers for eye care services, about 66.0% of respondents claimed to have willingly visited eye health care centers for treatment before intervention, but following eye health education interventions there was an upward shift (70.53%) in knowledge level of respondents that are willing to visit eye health care centers for treatment afterwards.

Furthermore, respondents claimed to have willingly visited eye care centers for the following eye health care services with proven significant upward shift in willingness to access eye care after intervention on refraction for eye glasses with a percentage mean score of 65.61% cataract surgery (59.77%), glaucoma treatment (83.00%), and routine eye screening and examination (83.33%), respectively. The upward increase in willingness in accessing eye care services for their eye problems was facilitated by the effect of nurse-led health education interventions conducted in the current study.

$H0_1$: There is no significant difference in knowledge of eye health problems before and after nurse-led eye health education interventions among residents of Ilorin East LGA.

Table 4. T-test analysis on the effectiveness of the health education intervention on knowledge of eye health problems

Knowledge of eye care	$\bar{X}$	SD	SE	df	t	Sig. p
Pre-intervention	62.16	19.22	1.2958	219	1.98	0.002
Post-intervention	86.37	8.61	0.5805	219		

$\alpha = 0.05$.

Table 4 reveals the t-test analysis on the effectiveness of eye health education interventions on the knowledge of eye health problems and the test was conducted at 0.05 level of significance. Comparing the P-value of 0.002 with $\alpha = 0.05$, 0.002 is less than 0.05. The null hypothesis is therefore rejected and we conclude that there is a significant difference in the knowledge of eye health problems before and after nurse led eye health education interventions among residents of Ilorin East LGA.

H0₂: There is no significant change in the knowledge level of residents in Ilorin East LGA about determinants of risk factors to eye health problems before and after eye health education interventions.

Table 5. T-test analysis on the knowledge level of determinants of risk factors on eye health problems

Knowledge of determinants of risk factors on eye problems	$\bar{X}$	SD	SE	df	t	Sig. p
Pre-intervention	58.20	13.33	0.8987	219	1.98	0.000
Post-intervention	71.14	5.28	0.356	219		

$\alpha = 0.05$.

Table 5 displays the t-test analysis on the knowledge level of residents in Ilorin East LGA on determinant of risk factors to eye health problems before and after eye health education interventions. The test was conducted at 0.05 level of significance and comparing the P-value of 0.002 with $\alpha = 0.05$, 0.002 is less than 0.05. The null hypothesis is therefore also rejected at 0.05 level of significance and we also conclude that there is a significant difference on determinants of risk factors to eye health problems before and after eye health education interventions among residents of Ilorin East LGA.

H0₃: There is no significant difference in health-seeking behaviors towards practicing eye health problem preventive measures before and after health education interventions among residents of Ilorin East LGA.

Table 6. T-test analysis of health education interventions on health Seeking behviours about practice of preventive measures

Health Seeking behviours about practice of preventive measures	$\bar{X}$	SD	S.E	Df	t	Sig. p
Pre-intervention	53.29	9.64	0.6499	219	4.67	0.001
Post-intervention	82.18	4.66	0.3142	219		

$\alpha = 0.05$.

Table 6 shows the t-test analysis on health-seeking behaviors towards practicing eye health problem

preventive measures before and after health education interventions among residents of Ilorin East LGA. The test was equally carried out at 0.05 level of significance and just like for the first two hypotheses, the third null hypothesis is rejected at 0.05 level of significance, because the P-value, 0.002 is less than $\alpha = 0.05$. This implies that there is a significant difference on health-seeking behaviors among residents of Ilorin East LGA towards practicing eye health problem preventive measures.

Discussion

The mean age of respondents in the current study was 55years with females constituting the majority (60.5%) of the respondents. Quite a large number of residents are Muslims (94.5%) and 33.5% of them attended either secondary or tertiary education as against 66.5% with primary or non-formal educational qualifications, but are self-employed. The low proportion of respondents' higher education status may be responsible for their low socio-economic status that may negatively influence their knowledge about risk factors and willingness to take preventive measures in the community before eye health education interventions.

The findings of this study further show that the health education interventions have significant impacts on the respondents' knowledge level about eye health problems, determinants of risk factors to eye health conditions and health-seeking behaviours towards willingness to practice preventive measures of eye problems. This has been portrayed by the significant increase in the percentage mean response scores across all the question items. Furthermore, rejecting the three null hypotheses at 0.05 level of significance is a further testament to the fact that nurse-led eye health education interventions have significant impacts on knowledge level about eye problems, determinants of risk factors to eye health conditions as well as health-seeking behaviours towards willingness to practice preventive measures of eye health problems among adult residents of Ilorin East Local Government Area.

The current findings support the study by Burn et al. (2020) and Enas et al. (2024) whose reports showed that patients who participated in the educational sessions had a better understanding of eye care and are willing to carry out instructions taught during health after health education training sessions. Ekpenyong (2018), and Moyegbon et al. (2024) findings also supported that knowledge and comprehension of eye health among many people may contribute to knowing and awareness of that various eye conditions could result in blindness in the future. The findings are also in line with a study by Goyal et al. (2023) whose assumption was that eye health education interventions showed a promising result in improving knowledge, attitudes, and behaviours related to eye health among individuals. Moreover, this current finding contradicts a study by Marrone et al. (2021) in a way that only one third of respondents were able to self-detect symptoms of their eye problems.

In the current study, despite respondents' high base-line knowledge about risk factors to eye problems in percentage mean scores, and risk factors to various eye conditions, there was a little improvement in their knowledge level after intervention on various eye problems in this study. This implies that even with high base-line knowledge on various risk factors, there was not much impact of interventions on respondent's knowledge level about eye conditions, such as trauma as a cause of cataract, glaucoma being inherited, uncontrolled blood sugar, lifestyle and eye infections. The current study corroborates a study reported by Enas et al. (2024), in a study conducted by Alswaiti (2023). This study is also supported by Solomon et al. (2022) who opined that when people are not aware of the importance of contributing factors to prevalence of eye diseases, signs and symptoms of eye problems and what could predispose them to blindness will result in lack of motivation to seek eye health care, which in turn leads to delay the presentation of certain eye diseases to the hospital.

The respondents' knowledge level about preventive measures regarding eye health problems in the current study shows a higher percentage mean score after health education interventions with an upward shift of the residents' base-line knowledge from 53.29% to 82.18% after nurse-led health education interventions. However, only 51.04% of residents believed that eye check-up should be regular at least once in a year regardless of eye problems, which signifies that despite the knowledge gained during the intervention, residents could not attach much importance to regular eye check-up for early detection of eye problems. This finding supported Zaback et al. (2020) and Paudel et al. (2022) who maintained that inadequate knowledge about the importance of regular eye check-ups could be a barrier to eye health care access.

The limited awareness of available services among those who understood the concepts of eye health care and the importance of preventive measures highlighted a gap in eye care service utilizations in this study. This existing gap was also observed by Atta et al. (2022) who stated that even with respondents' awareness of the importance of preventive measures, their knowledge status does not translate into consistent preventive engagement with eye health care services.

Limitations of the Study

The limitations of this study are lack of a control group, which limits the opportunity to compare the effectiveness of the interventions. This study also lacks self-reported measures, which may pose potential bias among the participants. Further studies are needed to address these limitations.

Conclusions

This study concluded that knowledge level about health education interventions has significant impacts on the respondents' knowledge level about eye health problems, determinants of risk factors to eye health conditions and health-seeking behaviours towards willingness to practice preventive measures of eye health problems. It was also concluded that, despite residents' significant increased knowledge about eye health problems, determinants of risk factors and health-seeking behaviours after intervention, residents' willingness to seek eye care services and take preventive measures was still very low compared with significant knowledge increase recorded following nurse-led eye health education interventions among adult residents of Ilorin East Local Government Area.

Recommendations

Based on the conclusions of this study, the following recommendations are made:

1. Health institutions should integrate eye health education into primary health care services as a priority to ensure consistent and sustainable eye health message dissemination to communities.
2. Health managers should include training of health educators on the necessary skills and knowledge to deliver effective and engaging eye care health education sessions at the community level
3. Nurses should organize educational workshops and outreach initiatives aimed at informing the public about the importance of eye health problems and taking preventive measures.
4. Nurses should design health education programs and implement strategies for prevention and reporting common eye infections, such as conjunctivitis, trachoma, eye pain, redness and discharge.
5. Nurses and health workers should place emphasis more on practicing eye and personal hygiene, avoiding self-medication, and seeking timely care for symptoms, such as redness, discharge, or foreign bodies in eyes.
6. Governments at all levels should increase the number of eye care clinics and equip them to make services more accessible and affordable to the public.
7. Governments should provide affordable means of transportation to and from eye care centers in communities.

Implications for Nursing

I. This study provides an opportunity for nurses to be informed about the base-line knowledge level of residents about various eye problems, which will enable nurses and eye care institutions to plan eye care outreach programs to improve residents' health seeking behviours towards preventing risk factors to eye problems.

II. The outcomes of this study will give residents opportunities to be taught and understand various eye problems, and risk factors that they are exposed to, as well as to take preventive measures to protect themselves from eye ill health conditions.

III. This study has demonstrated significant effectiveness of nursing health education interventions towards improved knowledge of residents on eye illness conditions, the determinants of risk factors to eye problems, and the need to willingly access eye care services in community eye health care centers.

Author Contributions

Manuscript Writing: **UNJ**. Study Design: **JOD**. Critical revisions for important intellectual content: **OSK**. Study Supervision: **IAM**. Data Analysis: **AOJ**. Revision of the manuscript: **OAO**. Teaching aids and Instrument design: **AAN**. Data collection and sorting for analysis: **SKO** and **ASB**.

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Conflict of Interests

The authors have no conflict of interests to declare.

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