https://dx.doi.org/10.4314/jnoa.v26i1.6

Factors Associated with Readership of Journal of the Nigerian Optometric Association - A Cross-sectional Study of Nigerian Optometrists.

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Abstract

Background: Academic journals are often the primary repositories of evidence-based practice (EBP) which is an essential component of good quality, patient-centred health care. Although medical journals shape clinical practice and decision-making, there is a backdrop of perceived reader apathy. Here, we describe the readership of the Journal of the Nigerian Optometric Association (JNOA), investigate the attitudes and perceived barriers towards the JNOA.

Methods: Of the 155 optometrists surveyed, aged 39.0 ± 9.8 years, 13 (8.4%) were researchers/ academics, and majority were women (n=83, 53.5%). Participants' reading pattern, perception of the articles, suggestions on what could motivate them to read the journal articles were assessed. Chi-square test determined the association between journal readership and individual variables.

Results: Although majority of the participants (90.2%) said their clinical practice was guided by evidence, 53% read a scientific article at least once a month, and only 41% (mostly younger optometrists aged 20-40years) with fewer years of practice experience read the JNOA. Those concerned about the length of the articles (67%, p=0.015) or who felt the articles lacked clinical relevance (75%, p=0.002) were less likely to read JNOA. Presentation format (electronic or hard copies) had no significant effect on readership. Participants felt that providing updates on current clinical practice, and having a continuing professional development (CPD) article in JNOA could encourage readership.

Conclusion: Overall, readership of JNOA was low among members with length of articles and lack of clinical relevance perceived as barriers. Including CPD articles and sections like clinical relevance may improve readership of JNOA.

Keywords: JNOA, Readership, Nigerian Optometrists.

Introduction

Academic journals are the primary repositories of the evidence base of their respective cognate professions and play a major role in scientific communication[1,2], especially when they demonstrate a high level of editorial rigour and best practices based on quality and impact criteria. The sphere of influence of a journal is measured by the Impact Factor (IF) which is the ratio between the number of citations received in that year, for publications in that journal that were published in the two preceding years and the total number of citable items[3,4].

Annually, Clarivate Analytics publishes the Journal Citation Reports on the Web of Science indicating the IF and other metrics of over 21,000 journals included in the Web of Science core collection; incidentally, only 3 optometry journals – Clinical and Experimental Optometry, Ophthalmic and Physiological Optics and Optometry and Vision Science are currently listed in its annual impact factor calculations[3].

The goal of most medical journals is to improve healthcare through communication of clinical and research findings to their audience, while also seeking to improve their IF and breaking trending medical news. Regular impact assessment of journals using specific weighted criteria helps to identify inherent deficits and provide remedies in order to attain wider readership and greater impact[5].

Despite empirical evidence[6,7] suggesting that medical journals shape clinical practice, health policy, public health, biomedical research and directly influence clinical decision-making, and that significant amount of time, effort, and money are invested in publishing peer-reviewed medical literatures; there is a growing perception that healthcare professionals (HCPs) rarely read these journals[7]. This poses a potential threat to disciplinary literacy[8-11] and indicates the need to reverse the growing trend. Consequently, it is recommended that clinicians must read 200 articles and 70 editorials each month if they were to keep up with the 10 leading journals in internal medicine[12].

Past studies[13,14] have identified reasons for reading medical journals which included updating oneself with progress in a particular specialty/field of study, finding out solution to a particular problem, knowing about causation, clinical features and course of a disorder/disease, understanding certain fundamental aspects like pathophysiology, gaining an idea for carrying out a research work, reading an article assigned by an instructor, finding support for one's view and impressing others. Apart from

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these perceived benefits, reading generally enables the acquisition of knowledge, exposure to new persons, places and techniques, as well as reduces the risk of mortality[15,16] and stress[17]. In addition, reading provides a protective mechanism against neurodegenerative diseases by keeping the brain active and engaged, especially when reading out loud[17] and promotes cognitive processes which lead to greater survival[9,18-21]. These findings showed that reading is beneficial and provide further evidence for intensifying the advocacy for improved reading culture among HCPs.

The clarity of ideas and specificity of clinical findings have been identified as important factors associated with the readership of medical literatures[22]. A previous study[22] evaluated 51 medical articles to ascertain how the implications for medical practice were reported. The findings of the study showed that 35 (68.8%) articles reported whether one clinical approach was different from the other, specific courses of action were suggested in 25.5% of the articles, 1 (2%) article gave instructions on how to implement the changes, 34 (66.7%) articles called for further research, while approximately 50% of the articles used tentative languages. The study therefore recommended that authors and editors of clinical literatures should be clear and direct in presenting implications of research findings for practice, as well as emphatic in stating when the findings do not justify changes in clinical approach.

Although JNOA has significantly evolved over the years, both in scope and the number of articles published, no known scientific bibliometrics have been conducted using standard algorithms. Against the backdrop of the perceived reader apathy among HCPs, and to provide evidence-based strategies to reposition JNOA for greater impact, this study was conducted to understand the characteristics of readers of JNOA and identify inherent factors that affect its readership. The findings of this study will provide the first evidence-based approach to improve the journal readership.

Materials and methods

Study design

This was a cross-sectional study conducted among Nigerian Optometrists using online and paper-based survey. Participants were recruited using convenient sampling technique and snowballing approach. An e-link of the survey was sent to the email addresses of all members of the Nigerian Optometry Association (NOA) provided by the association. The e-link of the survey was pasted on professional platforms (Facebook and WhatsApp) which were commonly used by members of the association for interaction. The participants were also encouraged to share the survey link with other

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colleagues. In addition to the online survey, a paper-based version of the questionnaire was distributed during the Annual Conference of NOA in July 2022, to increase participation considering the low response rate in previous online only surveys among Nigerian Optometrists[23].

Survey design

The survey was designed on google form by members of the editorial board of the association's journal. This ten-member panel of the editorial board brainstormed on the questions and its relevance in addressing the aim of the study. Following the initial draft of the questionnaire, the items were piloted using 10 optometrists to assess the ease of completing the questionnaire. Following the response from the pilot, a final draft of the questionnaire shown in Supplementary file 1 was developed.

The questionnaire comprised of three sections including demography (gender, age, number of years in practice, institution where optometry training was undertaken, additional qualification beyond their first optometry qualification as well as mode of practice), evidence based clinical practice (whether the optometrists use evidence to guide their clinical practice, frequency of reading scientific journals, sources of scientific journals, whether they modified their clinical practice based on current evidence and what factors prevented them from reading scientific journals. The last section asked about their readership of JNOA which asked whether they read the JNOA and how frequently they read the journal, whether they published any article in the JNOA, their preferred format for receiving the journal and how they think the readership of JNOA can be improved.

Dependent and independent variables

The dependent variable in this study is the readership of the JNOA which was obtained from the item 'whether respondents read the JNOA'. The responses were coded as '1' for 'Yes' and '2' for 'No'.

The independent variables included the demographics of gender, age (grouped into decades from 21 years), years in practice (grouped into 1 – 10, 11 – 30 and 30+ years), optometry training institution, optometry qualifications (OD and BSc), practice setting (private practice, public hospital, academia/research, or a combination of these), past publication(s) in JNOA (yes/no), practitioners' perception of the nature of the articles published in the journal and factors that might improve the likelihood of reading the articles in the journal which was a closed ended questions with two options for each factor. There was also a final open-ended question which required respondents to state two important factors that will motivate them to read articles in the journal.

Data analysis

The data were entered into excel spreadsheet and exported to SPSS Statistics 28.0 (IBM, Armonk, NY, USA). The demographic and outcome variables were summarised as counts and percentages for

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categorical variables presented as tables and charts. Data was tested for normality using Kolmogorov-Smirnov test and appropriate descriptive statistics was applied to summarise quantitative variables. The chi-square (χ^2) test was used to assess the association between the independent variables and the dependent variable.

Ethical consideration

The study was conducted in accordance with the Helsinki Declaration for Human Research. The responses were treated with utmost confidentiality and each participant gave consent before completing the survey. Consent was obtained by requesting participants to click 'Yes' if they want to participate after reading the introduction to the questionnaire. No identifying information was collected from respondents. Study protocol was approved by the Nigerian Optometry Association who also assisted with distribution of the survey link using the email data base of members.

Results

Characteristics of respondents

A total of 155 optometrists (mostly females, n=83, 53.5%) aged between 24 and 62 years (mean age ± standard deviation SD, 39.0 ± 9.8 years) responded to the survey. Table 1 presents the characteristics of the respondents showing that majority (44.3%) were aged 31 – 40 years, had practiced for 11 – 30 years (48.7%), mostly in Nigeria (94.7%), completed their undergraduate training in University of Benin (44.2%) and were private practice optometrists (47.4%) while 8.4% worked in research or academic institutions. Over 90% of the respondents graduated as Doctor of Optometry (OD) while 65 (41.9%) respondents have proceeded to obtain further qualification including postgraduate degree (Table 1).

Table 1: Demographic characteristics and factors influencing reading of JNOA

Variables	Frequency	(%)
Demographic factor		
Sex (n = 155)		
Female	83	53.5
Male	72	46.5
Age category (years) (n = 140)		
21 – 30	30	21.4
31 – 40	62	44.3
41 – 50	29	20.7
51 – 60	18	12.9
61 – 70	1	0.7
Years of practice (152)		
1 – 10	61	40.1
11 – 30	74	48.7
31+	17	11.2

Education factor		
Training Institution (154)		
UNIBEN	68	44.2
ABSU	57	37.0
Others (IMSU, BUK, MU, KNUST)	29	18.8
Highest educational qualification (n=155)		
OD	143	92.3
Bachelor's degree	12	7.7
Other Higher Qualification obtained (n = 65)		
Postgraduate Degree (Masters /PhD)	41	63.1
Fellowship	19	29.2
Others (Bachelor's degree/certificate/PGD)	5	7.7
Practice factor		
Type of practice (n = 154)		
Private clinic	73	47.4
Public hospital/service	41	26.6
Combination	22	14.3
Academic/Research	13	8.4
Others (NGO/Faith-based/Industry)	5	3.2
Practice location (n = 152)		
Yes	144	94.7
No	8	5.3

UNIBEN = University of Benin; ABSU = Abia State University; IMSU = Imo State University; BUK = Bayero University; MU = Madonna University; KNUST = Kwame Nkrumah University of Science and Technology

Use of evidence-based practice

Table 2 presents the respondents perceptions on use of evidence-based optometry practice. Although nearly all the respondents (90.2%) said their practice was guided by evidence, less than a quarter (22%) read a scientific journal at least once weekly and about 41.4% stated that they read the JNOA, which was not dependent on age ($p = 0.753$) or years of practice of the optometrists ($p = 0.837$). More than one third had no publication history and about 88% stated that they have not published in the JNOA. When queried about their perception on what can be done to improve the readership of the journal, over 90% indicated that including a summary of the clinical relevance of research articles in each publication, having a section on clinical practice, inclusion of CPD articles, and updates on current clinical practice in the journal were more likely to improve readership of the journal. Figure 1 shows the readership of JNOA by gender, age and years in practice.

Table 2: Use of evidence-based practice

Variables	Frequency	(%)
Evidence based practice		
Use of evidence to guide practice (n = 153)		
Yes	138	90.2
No	15	9.8
Frequency of reading scientific journals		
at least once a month	79	53.0
at least once a week	33	22.1
at least once in 6 months	37	24.8
Publication History		
Past publication in scientific journal (n = 151)		
Yes	33	21.9
No	118	78.1
Past publication in JNOA (n = 153)		
Yes	17	11.1
No	136	88.9
Preferred format of JNOA (n = 151)		
Electronic copies	87	57.6
Hard copies	8	5.2
No preference	56	36.1
Perception of articles in JNOA		
Technical and difficult to understand (n = 144)		
Yes	21	14.6
No	70	48.6
Unsure	53	36.8
Clinically irrelevant (n = 136)		
Yes	16	11.8
No	67	49.3
Unsure	53	39
Too lengthy (n = 130)		
Yes	24	18.5
No	56	43.1
Unsure	50	38.5
Factors that may likely improve readership of JNOA		
A summary of clinical relevance of articles (n = 151)		
Likely	145	96.0
Not likely	6	4.0
Section on clinical practice (n = 147)		
Likely	142	96.6
Not likely	5	3.4
Inclusion of CPD articles (n = 146)		
Likely	132	90.4
Not likely	14	9.6
Updates on current practice (138)		
Likely	136	98.6
Not likely	2	1.4

Factors influencing reading of JNOA

The respondents' characteristics by their readership of JNOA had been presented in Table 3 together with their chi-square test result. Although those who read the JNOA articles were slightly younger, had fewer years of experience, worked in academia, and had previous publication, the perceived lack of clinical relevance and concern about the length of the published articles were the only significant factors associated with the readership of JNOA among the respondents.

Table 3: Chi square analysis of factors influencing reading of JNOA

Variable	Read JNOA			
Sex	**Yes**	**No**	**Chi Square**	**p-value**
Female	34 (42.0)	47 (58.0)	0.02	0.999
Male	29 (40.8)	42 (59.2)		
Age category (years)				
21 – 40	41 (44.6)	51 (55.4)	0.902	0.369
41 and above	17 (36.2)	30 (63.8)		
Years in practice				
1 – 10	27 (42.9)	36 (57.1)	0.166	0.737
11 and above	34 (39.5)	52 (60.5)		
Training Institution				
UNIBEN	27 (39.7)	41 (60.3)	1.775	0.412
ABSU	20 (37.0)	34 (63.0)		
Others	15 (51.7)	14 (48.3)		
First degree obtained at graduation				
BSc	6 (50.0)	6 (50.0)	0.393	0.555
OD	57 (40.7)	83 (59.3)		
Other higher qualification				
Postgraduate degrees (Masters/PhD)	17 (41.5)	24 (58.5)	0.635	0.728
Fellowship	8 (42.1)	11 (57.9)		
Others	3 (60.0)	2 (40.0)		
Practice setting				
Public Hospital/Service	15 (38.5)	24 (61.5)	5.841	0.211
Private practice	27 (37.5)	45 (62.5)		
Combination	10 (45.5)	12 (54.5)		
Academia/research	9 (69.2)	4 (30.8)		
Others	1 (20.0)	4 (80.0)		
Use evidence for practice				
Yes	59 (43.7)	76 (56.3)	3.128	0.099
No	3 (20.0)	12 (80.0)		

▶▶

Frequency of reading the JNOA				
At least once a month	36 (46.2)	42 (53.8)	2.199	0.333
At least once a week	15 (46.9)	17 (53.1)		
At least once in 6 months	12 (31.4)	25 (67.6)		
History of scientific publication				
Yes	17 (51.5)	16 (48.5)	1.481	0.237
No	46 (39.7)	70 (60.3)		
History of publication (JNOA)				
Yes	10 (58.8)	7 (41.2)	2.304	0.191
No	53 (39.6)	81 (60.4)		
Format for receiving JNOA				
E-copies	36 (41.9)	50 (58.1)	0.293	0.864
Hard copies	4 (50.0)	4 (50.0)		
No preference	22 (40.0)	33 (60.0)		
Perception of articles in JNOA				
Technical				
Yes	8 (38.1)	13 (61.9)	0.497	0.780
No	31 (44.9)	38 (55.1)		
Unsure	21 (39.6)	32 (60.4)		
No clinical relevance				
Yes	4 (25)	12 (75)	12.563	**0.002***
No	37 (56.1)	29 (43.9)		
Unsure	14 (26.4)	39 (73.6)		
Length of the articles				
Yes	8 (33.3)	16 (66.7)	8.361	**0.015***
No	31 (56.4)	24 (43.6)		
Unsure	15 (30.0)	35 (70.0)		
Factors that may likely improve readership of JNOA				
Summary of clinical relevance				
Likely	58 (40.6)	85 (59.4)	0.212	0.689
Unlikely	3 (50.0)	3 (50.0)		
Section on clinical practice				
Likely	56 (39.7)	85 (60.3)	3.237	0.159
Unlikely	4 (80.0)	1 (20.0)		
A section on CPD				
Likely	54 (41.5)	76 (58.5)	0.177	0.780
Unlikely	5 (35.7)	9 (64.3)		
A section on current practice updates				
Likely	52 (38.8)	82 (62.2)	3.082	0.156
Unlikely	2 (100.0)	0 (0.0)		

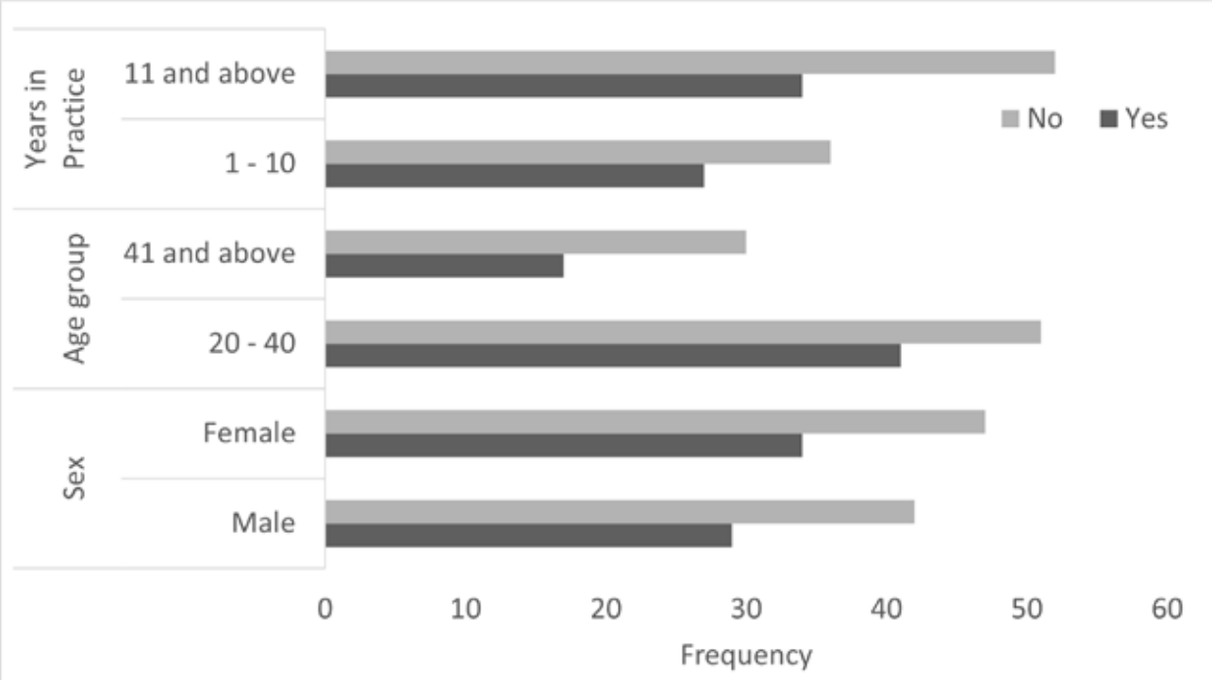

Figure 1: Readership of JNOA by gender, age, and years in practice

Discussion

The findings of this study provide valuable insights into the readership patterns of the Journal of the Nigerian Optometric Association (JNOA) among Nigerian optometrists. The results indicate that 41% of the participants reported reading the JNOA. This finding suggests a moderate level of engagement with the association's journal, although there is room for improvement to encourage a higher readership rate.

It is noteworthy that the participants who were more likely to read the JNOA were primarily younger optometrists between the ages of 20 and 40 years, with fewer years of practice experience. This trend might be attributed to the fact that younger optometrists are more familiar with current research practices and are more inclined to seek out up-to-date information to support their clinical decision-making whereas anecdotal evidence seems to suggest that more experienced practitioners tend to rely on their years of clinical practice in clinical decision making[24]. It could also reflect the quest for additional information and evidence to guide practice where the older practitioners may rely on experience. Findings[24] indicate that reliance on personal experience is drawback to the application of evidence-based practice in clinical decision making. This finding is in agreement with previous report among Australian Optometrists[25] emphasizing the importance of targeting younger optometrists in efforts to promote journal readership and foster a culture of evidence-based practice among this group.

In terms of publication rates, only 10% of the participants had previously published articles in the JNOA. This relatively low number suggests a

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potential gap in research dissemination and scholarly contribution among Nigerian Optometrists. Encouraging and facilitating research participation and publication among optometrists should be a priority to enhance the overall scientific output of the profession and increase the relevance and impact of the journal[26].

Interestingly, despite most participants (90.2%) claiming that their clinical practice was guided by evidence, the frequency of reading scientific articles was relatively low, with more than half (53%) reporting reading an article at least once a month. This finding raises questions about the translation of evidence into practice and suggests a potential discrepancy between the intention to practice evidence-based optometry and the actual engagement with research literature. Efforts should be directed towards bridging this gap, emphasizing the importance of regular journal reading to stay updated with the latest evidence and fostering a deeper integration of EBP into clinical practice. As indicated in integrative review, these can occur at an individual or institutional level[27].

Past studies have shown that the most common barriers to evidence-based practice were lack of time and lack of autonomy to change practice[27,28]. Optometrists who expressed concerns about article length and perceived lack of clinical relevance were found to be less likely to read the JNOA. This finding is consistent with the view that the usefulness and value of information of published articles are enablers of journal readership[29] as well as the barrier of time available to read journal articles[28]. These findings highlight the significance of tailoring the journal's content to meet the specific needs and preferences of the readers[30]. Shorter, concise articles that provide clear clinical implications and relevance are more likely to capture the attention and interest of optometrists. Publishers should explore avenues for providing attributes of convenience and currency when presenting articles to their readers[29]. Additionally, the inclusion of a clinical relevance section, providing updates on current clinical practice, and incorporating Continuing Professional Development (CPD) articles were suggested by the participants as potential strategies to enhance readership. These suggestions align with the aim of supporting optometrists in their professional growth, continuing education, and practical application of research findings.

Limitations and Strengths

The present study has some limitations to consider when interpreting the results. First, the cross-sectional design allows for the examination of associations at a single point in time but does not establish causality or capture changes over time. Longitudinal studies would provide a more robust understanding of readership patterns and publication rates among Nigerian optometrists. Second, the study relied on self-reported data, which introduces the potential for recall bias or social desirability bias. Participants may have over- or

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underreported their readership habits or publication history, leading to inaccuracies in the findings. Third, the relatively small sample size could affect the generalizability of the findings suggesting that a larger sample would provide a more representative picture of the readership patterns and publication rates among Nigerian optometrists. Fourth, the use of a convenience sampling method may have introduced sampling bias such that only participants who were more interested or involved in research or those with a higher motivation, may have been overrepresented, while those less interested or less motivated may have been underrepresented. Fifth, the reliance on quantitative data limited the opportunity to gather in-depth insights into optometrists' motivations, barriers, and experiences related to journal readership and publication. Future studies may consider including qualitative data through interviews or focus groups to provide a richer understanding of the factors influencing optometrists' engagement with the journal. Sixth, the study focused specifically on the readership patterns and publication rates of the Journal of the Nigerian Optometric Association (JNOA) among Nigerian optometrists. The findings may not be applicable to other journals or optometry contexts outside of Nigeria. Despite the limitations, the study has several strengths including having a diverse sample of Nigerian optometrists, which enhances the generalizability of the findings to the larger optometry community in Nigeria. The use of a structured survey questionnaire to collect data, allowed for standardized responses and facilitating data analysis, thereby providing a clear and objective measure of readership patterns and publication rates among optometrists. Another strength of the study was the identification of important trends related to readership patterns, publication rates, and the factors influencing optometrists' engagement with the journal. These findings contribute to a deeper understanding of the current state of research dissemination and evidence-based practice in the field of optometry in Nigeria. A practical implication of our study is that it provides practical insights for journal editors and professional associations by suggesting strategies to enhance readership, such as tailoring content to meet readers' needs, providing concise and clinically relevant articles, and incorporating Continuing Professional Development (CPD) articles. These recommendations have the potential to improve the relevance and impact of the Journal of the Nigerian Optometric Association (JNOA). Finally, the study adds to the existing body of literature on optometry readership patterns and publication rates. It specifically addresses the context of Nigerian optometrists, filling a gap in knowledge and serving as a reference for future research and interventions aimed at promoting research dissemination and evidence-based practice in optometry.

Conclusion

In conclusion, this study provides valuable insights into the readership patterns of the JNOA among Nigerian optometrists. The findings highlight a moderate level of engagement with the JNOA, indicating room for improvement to encourage higher readership rates. Targeting younger optometrists, who are more familiar with research practices, is crucial to foster a culture of evidence-based practice and promote

journal readership. The relatively low publication rates among optometrists indicate a potential gap in research dissemination and scholarly contribution. Encouraging research participation and publication among optometrists is essential to enhance the scientific output of the profession and increase the relevance and impact of the JNOA. Efforts should be directed towards bridging the gap between the intention to practice evidence-based optometry and actual engagement with research literature. Tailoring the journal's content to meet the specific needs and preferences of the readers, providing concise and clinically relevant articles, and incorporating Continuing Professional Development (CPD) articles are potential strategies to enhance readership and support optometrists in their professional growth, continuing education, and practical application of research findings.

[How to cite this article: Bernadine Nsa Ekpenyong, Godwin Ovenseri-Ogbomo, Uchechukwu Levi Osuagwu, Augustine Ugochukwu Akujobi, Kindness Charles, Philips Ifeanyichukwu Ebisike, Kelechi Mezu-Nnabue, Udo Ubani, Ikenna Ejinkeonye, Ogechi Nwokedi, Eki Oghre, Nwakaego Ikoro. Factors Associated with Readership of Journal of the Nigerian Optometric Association - A Cross-sectional Study of Nigerian Optometrists. Journal of the Nigerian Optometric Association.2024;26(1):*35-47*]