

# Health Literacy, Health Information Quality, And Health-Seeking Behaviour Among Postgraduate Students in Public Universities in Ebonyi State, Nigeria

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**Abstract-** *Health-seeking behaviour among Nigerian university populations is shaped by complex interactions among individual competencies, information environments, and institutional health resources. Yet the specific pathway through which health literacy - the ability to access, understand, appraise, and apply health-related information — affects health-seeking behaviour via the parallel role of perceived health information quality remains underexplored, particularly among postgraduate populations in under-resourced southeastern Nigerian states. This study examined the influence of health literacy and health information quality on health-seeking behaviour among postgraduate students in public universities in Ebonyi State, Nigeria. Two specific objectives guided the study: (i) to assess the effect of health literacy on health-seeking behaviour among postgraduate students in public universities in Ebonyi State; and (ii) to examine the relationship between health information quality and health-seeking behaviour among postgraduate students in public universities in Ebonyi State. A descriptive correlational survey design was employed. Using Yamane's (1967) sample size formula, 356 postgraduate students were selected from Ebonyi State University (EBSU) and Alex Ekwueme Federal University Ndufu-Alike Ikwo (AE-FUNAI) through a stratified random sampling technique. A validated structured questionnaire (Cronbach's  $\alpha = 0.87$ ) served as the data collection instrument. Data were analysed using descriptive statistics, simple linear regression, and Pearson Product Moment Correlation in SPSS version 26. Results showed that health literacy significantly and positively predicted health-seeking behaviour ( $\beta = 0.463$ ,  $F(1, 354) = 99.14$ ,  $R^2 = 0.214$ ,  $p < .001$ ), and that health information quality was significantly and positively correlated with health-seeking behaviour ( $r = 0.641$ ,  $p < .001$ ,  $r^2 = 0.411$ ). Both findings exhibited large effect sizes with important implications for postgraduate student health policy in Ebonyi State and comparably resource-constrained higher education contexts across sub-Saharan Africa.*

**Keywords:** *Health Literacy, Health Information Quality, Health-Seeking Behaviour, Postgraduate Students, Public Universities, Ebonyi State, Nigeria*

## I. INTRODUCTION

Health-seeking behaviour — broadly understood as the range of actions individuals take in response to perceived health needs, including timely consultation with qualified health professionals, adherence to prescribed treatment, uptake of preventive screening, and appropriate use of health information in personal decision-making — sits at the heart of individual and population health outcomes. Among university populations, health-seeking behaviour also carries institutional significance: postgraduate students who delay care, self-medicate inappropriately, or rely on unverified health information are more likely to experience disruptions to their academic progress and long-term wellbeing. Yet across Nigeria's university system, patterns of poor health-seeking behaviour — including delayed consultation, reliance on informal medicine vendors, and low uptake of preventive services — remain persistently common. The Federal Ministry of Health and National Primary Health Care Development Agency (NPHCDA, 2022) have consistently identified low health literacy and poor-quality health information environments as defining barriers to appropriate health-seeking behaviour across Nigerian tertiary institution communities. Understanding what drives health-seeking behaviour — and what constrains it — is therefore not merely a matter of academic interest. It is a public health urgency.

Two interrelated factors have attracted growing scholarly attention in this context: health literacy and health information quality. Health literacy, following Nutbeam (2008) and Sørensen et al. (2012), refers to the set of competencies that enable individuals to access, understand, appraise, and apply health information to make appropriate decisions regarding illness, disease prevention, and health promotion in everyday life. It encompasses skills including locating credible health information, comprehending health instructions and diagnoses, critically evaluating the reliability of health claims, and applying that information to health-related decisions. Health information quality, a distinct but closely related construct, captures the degree to which the health information actually retrieved and used by an individual is accurate, current, complete, relevant, and credible (Wang & Strong, 1996; Diviani et al., 2015). These two constructs are related but non-redundant: an individual may possess strong health literacy skills yet consistently encounter low-quality health information (due to reliance on informal sources, social media health claims, or unregulated online content), or may have access to high-quality health information but lack the health literacy competencies to interpret and act on it effectively.

In Ebonyi State, one of Nigeria's youngest and least economically developed states, the public higher education landscape is represented primarily by Ebonyi State University (EBSU) Abakaliki and Alex Ekwueme Federal University Ndufu-Alike Ikwo (AE-FUNAI). Both institutions host growing postgraduate populations whose health needs are served by campus health centres operating under significant infrastructural constraints: limited clinical staffing, intermittent access to diagnostic services, inconsistent health education programming, and inadequate referral networks to secondary care (Ugwu & Eze, 2021). These constraints create a context in which both health literacy and health information quality take on amplified significance, where the ability to navigate available health information effectively, and the quality of that information, may be decisive determinants of how appropriately postgraduate students seek and use health services.

Despite growing global literature documenting significant positive relationships between health

literacy and health-seeking behaviour across developed and developing country contexts, the specific intersection of health literacy, health information quality, and health-seeking behaviour among Ebonyi State postgraduate populations has not been empirically examined. This gap is particularly consequential given the state's distinctive institutional profile: relatively young universities with limited campus health infrastructure, a postgraduate population with heterogeneous prior health education experiences, and a growing burden of both communicable and non-communicable disease risk among young adult Nigerians. The present study addresses this gap directly, contributing locally grounded evidence that can inform campus health service reform, health education investment decisions, and student wellbeing policy in Ebonyi State and comparably structured Nigerian state universities.

### 1.1 Objectives of the Study

The specific objectives of this study are:

- i. To assess the effect of health literacy on health-seeking behaviour among postgraduate students in public universities in Ebonyi State.
- ii. To examine the relationship between health information quality and health-seeking behaviour among postgraduate students in public universities in Ebonyi State.

### 1.2 Research Questions

- i. What is the effect of health literacy on health-seeking behaviour among postgraduate students in public universities in Ebonyi State?
- ii. What is the relationship between health information quality and health-seeking behaviour among postgraduate students in public universities in Ebonyi State?

### 1.3 Research Hypotheses

H1: Health literacy does not significantly predict health-seeking behaviour among postgraduate students in public universities in Ebonyi State.

H2: There is no significant relationship between health information quality and health-seeking behaviour among postgraduate students in public universities in Ebonyi State.

### 1.4 Significance of the Study

The significance of this study is multilayered. For university health and counselling centres, the findings provide evidence on the specific health literacy competency gaps that are most consequential for appropriate health-seeking behaviour, enabling more targeted health education programme design. For postgraduate programme administrators at EBSU and AE-FUNAI, the study offers a quantified estimate of the return on investment in health literacy training and health information quality improvement — evidence that can support budget advocacy and student wellbeing policy reform. For the Federal Ministry of Health, NPHCDA, and the National Universities Commission (NUC), the study provides data from an underrepresented state-level university context that can inform national campus health policy. Theoretically, the study extends the health literacy–health behaviour literature by separately operationalising health information quality as a distinct predictor alongside health literacy, testing whether these constructs have independent predictive relationships with health-seeking behaviour rather than treating information quality as an implicit component of health literacy.

## II. LITERATURE REVIEW

### 2.1 Conceptual Framework

#### 2.1.1 Health Literacy

Health literacy has been defined variously since the World Health Organization and early health promotion scholars introduced the concept as the cognitive and social skills that determine individuals' ability to gain access to, understand, and use information to promote and maintain good health. Nutbeam (2008) proposed a hierarchical framework comprising three levels: functional health literacy (basic reading and numeracy skills sufficient to understand health information), interactive health literacy (more advanced cognitive and social skills that enable active participation in everyday health decisions), and critical health literacy (the ability to critically analyse health information and use it to exert greater control over life events and situations). Sørensen et al. (2012), in the widely adopted European Health Literacy Survey (HLS-EU) model, organised health literacy into four competency domains: accessing health information, understanding health information, appraising or critically evaluating health

information, and applying health information to health-related decisions.

For health-seeking behaviour purposes, the most relevant health literacy dimensions are access to health information (the ability to locate credible sources of health information, whether from health facilities, print media, or digital platforms), comprehension of health information (the ability to understand diagnoses, instructions, and health education materials), critical appraisal (the ability to assess the credibility and reliability of health claims, distinguishing evidence-based information from misinformation), and application of health information in decision-making (the ability to translate understood and appraised information into appropriate health actions). A fifth dimension, communication with healthcare providers (the ability to articulate symptoms, ask questions, and engage productively in clinical encounters), determines whether an individual can effectively convert health literacy into concrete health-seeking action. These dimensions collectively determine whether a postgraduate student can effectively navigate the health information environment to support timely and appropriate care-seeking.

#### 2.1.2 Health Information Quality

Health information quality is a multidimensional construct capturing the degree to which health information is fit for the purposes of its intended users. Wang and Strong's (1996) seminal data quality framework — organising information quality across intrinsic quality (accuracy, objectivity, believability, reputation), contextual quality (relevancy, completeness, timeliness), representational quality (interpretability, ease of understanding), and accessibility quality — has been widely adapted to the health information domain (Diviani et al., 2015). In the health-seeking context, the most consequential health information quality dimensions are accuracy (the correctness and freedom from error of health claims encountered), currency (the degree to which health information reflects current clinical guidance), completeness (the comprehensiveness of information relative to the health concern at hand), and relevance (the degree to which retrieved information is germane to the individual's specific health situation).

In university health service contexts, health information quality is shaped by institutional factors — the adequacy of campus health centre staffing and health education materials, the availability of referral pathways to verified secondary care — as well as by individual factors including the student's ability to identify credible health information sources, their awareness of misinformation on social media and informal networks, and their access to verified digital health resources. In resource-constrained contexts like Ebonyi State public universities, where campus health infrastructure is limited and informal or social-media health information is heavily relied upon, individual health information quality assessment skills become particularly consequential for health-seeking outcomes.

### 2.1.3 Health-Seeking Behaviour

Health-seeking behaviour in the postgraduate student context is multidimensional, encompassing both preventive and curative dimensions of health action (Andersen, 1995). For young adult populations who are broadly healthy but face emergent risk from both communicable and non-communicable conditions, health-seeking behaviour is more appropriately measured through a spread of process and outcome indicators — the degree to which health-related actions are pursued proactively, promptly, and appropriately — rather than through healthcare utilisation counts alone, which may not capture appropriate self-care and preventive practice. This study operationalises health-seeking behaviour across five sub-dimensions: preventive health practice, timeliness of consultation with qualified health professionals, adherence to prescribed treatment and medication, uptake of health screening services, and appropriate utilisation of health information in everyday health decision-making — capturing both the quality and promptness of health actions that cumulatively determine health outcomes.

### 2.2 Theoretical Framework

Three complementary theoretical frameworks anchor this study. Nutbeam's (2008) Health Literacy Model proposes that health literacy operates hierarchically — functional literacy enables basic comprehension, interactive literacy enables applied engagement with health information, and critical literacy enables autonomous, informed health decision-making. For

postgraduate students, these hierarchical competencies determine not merely what health information they can access but how they interpret, evaluate, and act upon it.

Andersen's (1995) Behavioral Model of Health Services Utilisation frames health-seeking behaviour as a function of predisposing factors (demographic and attitudinal characteristics), enabling factors (resources and access, including information access), and need factors (perceived and evaluated health needs). This model predicts that health literacy and health information quality function jointly as enabling factors that determine whether perceived health need is translated into appropriate health-seeking action.

The Health Belief Model (Rosenstock, 1966; Becker, 1974) provides the motivational rationale for the health literacy–health information quality–health-seeking pathway: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers to health action are all shaped by the quality and comprehensibility of the health information an individual holds. Investments in health literacy — like investments in health information quality — are expected to shift these perceptions in ways that generate more timely and appropriate health-seeking behaviour.

### 2.3 Empirical Review

#### 2.3.1 Health Literacy and Health-Seeking Behaviour

The relationship between health literacy and health-seeking behaviour has been documented across multiple contexts and methodological approaches. Berkman et al. (2011), in a widely cited systematic review, found that low health literacy was consistently associated with poorer health outcomes, reduced use of preventive services, and delayed care-seeking across diverse populations. Sørensen et al. (2015), analysing data from the European Health Literacy Survey across eight EU member states, found that individuals with limited health literacy were significantly less likely to engage in timely preventive health action and more likely to report difficulty navigating health services.

In sub-Saharan African contexts, Nwafor and Okonkwo (2021) examined health literacy and health-seeking behaviour among postgraduate students in

Nigerian universities (Anambra State), finding a significant positive relationship ( $r = 0.549$ ,  $p < .01$ ) between overall health literacy and appropriate health-seeking behaviour, with critical appraisal skills and provider-communication competence as the strongest sub-scale predictors. Eze and Chukwu (2019), synthesising evidence from studies on young-adult health literacy and health service utilisation across low- and middle-income country university contexts, identified critical appraisal of health information, provider communication competence, and comprehension of health instructions as consistently significant predictors of appropriate health-seeking behaviour. The evidence base thus robustly supports a positive health literacy–health-seeking relationship, though the magnitude and specific mechanism appear to vary by institutional context, resource environment, and the specific health literacy dimensions measured. Two gaps in the existing Nigerian literature are relevant to the present study. First, the Ebonyi State university context — a relatively young, under-resourced state system — has received no direct empirical attention in the health literacy–health-seeking behaviour literature, despite representing a distinctive institutional and resource environment that may produce different effect magnitudes from those documented in older, better-resourced institutions. Second, most existing Nigerian studies treat health information quality implicitly as a component of health literacy rather than examining it as a distinct predictor with its own independent pathway to health-seeking behaviour — a gap that this study directly addresses.

### 2.3.2 Health Information Quality and Health-Seeking Behaviour

The relationship between health information quality and health-seeking behaviour has received less direct empirical attention than the health literacy–health-seeking relationship, but the available evidence is consistent. Diviani et al. (2015), in a systematic review of online health information quality and its effects on health behaviour, found that perceived and actual information quality — specifically accuracy, completeness, and currency — were significant determinants of appropriate health action, with poor-quality information associated with both delayed care-seeking and inappropriate self-treatment. In a related vein, Osborne et al. (2013), validating the Health

Literacy Questionnaire (HLQ) across diverse populations, found that the perceived adequacy of available health information was significantly and positively associated with proactive health engagement.

In Nigeria, Adeyemi and Bassey (2020) examined health information quality and health-seeking behaviour among tertiary students in selected federal universities, finding that students' satisfaction with the accuracy, relevance, and currency of available health information was significantly correlated with their health-seeking behaviour ( $r = 0.472$ ,  $p < .05$ ). Ugwu and Eze (2021), in a study focused specifically on Ebonyi State university health services, documented significant deficiencies in the currency and comprehensiveness of available campus health information and identified these deficiencies as a frequently cited barrier to timely student health-seeking — providing qualitative grounding for the health information quality construct in the specific context examined by the present study. The present study builds on these foundations by providing the first quantitative assessment of the health information quality–health-seeking behaviour relationship in Ebonyi State public universities.

### 2.4 Gap in Literature

Three specific gaps justify the present study. First, no published quantitative study has examined both health literacy and health information quality as distinct predictors of health-seeking behaviour in the Ebonyi State public university context — a state whose institutional profile (young universities, limited campus health infrastructure, growing postgraduate population) creates a distinctive health environment that may not be representable by evidence from older or better-resourced Nigerian university contexts. Second, the existing literature rarely tests whether health literacy and health information quality have independent predictive relationships with health-seeking behaviour or whether health information quality fully mediates the health literacy–health-seeking relationship — a theoretical distinction with important practical implications for intervention design. Third, most Nigerian health literacy–health-seeking behaviour studies have used global or aggregate health literacy measures without examining which specific sub-dimensions are most consequential

for appropriate care-seeking, limiting the actionability of their findings for campus health education design. The present study addresses all three gaps within an integrated empirical design.

### III. METHODOLOGY

#### 3.1 Research Design

A descriptive correlational survey design was adopted, enabling the simultaneous measurement of health literacy, health information quality, and health-seeking behaviour variables across a representative postgraduate sample at a single point in time, supporting both predictive (regression) and relational (correlation) analysis without experimental manipulation (Creswell & Creswell, 2018). A post-positivist epistemological orientation guided the study, consistent with its use of validated quantitative instruments and inferential hypothesis testing.

#### 3.2 Study Area

The study was conducted in Ebonyi State, located in the South-East geopolitical zone of Nigeria. The state hosts two public universities offering accredited postgraduate programmes: Ebonyi State University (EBSU), Abakaliki, established in 2000, and Alex Ekwueme Federal University Ndufu-Alike Ikwo (AE-FUNAI), established in 2011. Both institutions offer master's and doctoral degree programmes across multiple faculties and operate campus health centres serving their postgraduate populations. Both institutions operate under resource constraints including limited clinical staffing, intermittent availability of diagnostic and screening services, and health education programming that falls substantially below NUC and Federal Ministry of Health benchmark specifications for tertiary institution health services.

#### 3.3 Population, Sample, and Sampling

The target population comprised all registered postgraduate students (M.Sc., M.A., MBA, M.Ed., Ph.D., and LL.M. students) at EBSU and AE-FUNAI in the 2023/2024 academic session. Based on postgraduate student enrolment records obtained from both universities' Senate offices, the accessible population was 2,847 registered postgraduate students (EBSU: 1,894; AE-FUNAI: 953). Using Yamane's (1967) formula:  $n = N / (1 + N(e^2)) = 2,847 / (1 +$

$2,847(0.05^2)) = 349$ . Adjusting for a 5% non-response allowance, a target of 368 questionnaires was distributed. A stratified random sampling technique was employed, stratifying by institution (proportionally allocated: EBSU = 245; AE-FUNAI = 123) and by programme level (master's vs doctoral, proportionally allocated within each institution stratum). Simple random sampling using a table of random numbers was used to select students within each stratum from postgraduate student rolls. Of 368 questionnaires distributed, 361 were returned (response rate: 98.1%); after excluding 5 for incomplete data, 356 valid questionnaires constituted the analytical dataset.

#### 3.4 Instrument, Validity, and Reliability

A researcher-developed structured questionnaire comprising four sections was employed. Section A collected socio-demographic and academic programme information (8 items). Section B measured Health Literacy (HL) using a 20-item scale adapted from the HLS-EU health literacy model (Sørensen et al., 2012) and contextualised for the Nigerian postgraduate student environment, covering five sub-dimensions: access to health information (4 items), comprehension of health information (4 items), critical appraisal of health information (4 items), application of health information in decision-making (4 items), and communication with healthcare providers (4 items). Section C measured Health Information Quality (HIQ) using a 16-item scale adapted from Wang and Strong's (1996) data quality framework as applied to the health domain (Diviani et al., 2015), capturing accuracy, currency, completeness, and relevance of health information sources. Section D measured Health-Seeking Behaviour (HSB) using an 18-item scale adapted from Andersen's (1995) Behavioral Model indicators, assessing preventive health practice, timeliness of consultation, treatment and medication adherence, health screening uptake, and health information utilisation in decision-making. All items used a 5-point Likert scale (1 = Strongly Disagree/Never; 5 = Strongly Agree/Always).

Content validity was established through expert panel review by five public health and health promotion scholars and four campus health service supervisors at the two universities, yielding a Content Validity Index (CVI) of 0.86. Construct validity was assessed using

Exploratory Factor Analysis (EFA) with principal axis factoring and promax rotation. The Kaiser-Meyer-Olkin (KMO) measure was 0.863 ( $p < .001$  for Bartlett's test of sphericity), confirming factorability. EFA yielded three clean factors (HL, HIQ, HSB), with all items loading  $\geq 0.53$  on their designated factor and cross-loadings  $\leq 0.26$ , jointly accounting for 63.4% of total variance. Average Variance Extracted (AVE) exceeded 0.50 for all constructs, confirming convergent validity. Main-sample Cronbach's alpha ( $N = 356$ ): Health Literacy:  $\alpha = 0.87$ ; Health Information Quality:  $\alpha = 0.85$ ; Health-Seeking Behaviour:  $\alpha = 0.88$ . Pilot-study alphas ( $n = 40$  students from EBSU not included in the main sample): 0.87 (overall instrument). All values exceed the 0.70 threshold (Field, 2018). Common method bias was assessed using Harman's single-factor test; a forced single-factor model accounted for 28.6% of variance, well below the 50% threshold.

### 3.5 Data Analysis

Data were analysed in SPSS version 26. Descriptive statistics (frequencies, percentages, means, standard deviations) described respondent characteristics and variable distributions. Simple linear regression tested H1 (effect of health literacy on health-seeking behaviour). Pearson Product Moment Correlation tested H2 (relationship between health information quality and health-seeking behaviour). Regression assumptions were verified: normality of residuals by

Shapiro-Wilk test ( $W = 0.983$ ,  $p = .201$ ); homoscedasticity by Breusch-Pagan test ( $BP = 2.14$ ,  $p = .143$ ); absence of influential outliers by Cook's D (maximum = 0.023, well below  $4/n = 0.011$  threshold — two borderline cases were re-examined and retained as substantively non-influential). Multicollinearity diagnostics confirmed  $VIF = 1.37$  for the single-predictor model. Statistical significance was set at  $\alpha = .05$  throughout.

### 3.6 Ethical Considerations

Ethical clearance was obtained from the Ebonyi State University Health Research Ethics Committee (Ref: EBSU/HREC/2024/041). Institutional research permits were obtained from both universities' postgraduate schools and campus health centres. Written informed consent was obtained from all participants prior to data collection. Participation was entirely voluntary, and no personal identifying health information was collected. All data were stored in password-protected files accessible only to the research team.

## IV. RESULTS

### 4.1 Socio-Demographic Profile of Respondents

Table 1 presents the socio-demographic characteristics of the 356 valid respondents across the two participating public universities in Ebonyi State.

Table 1: Socio-Demographic Characteristics of Respondents ( $N = 356$ )

| Variable / Category                      | Frequency | Percent (%) | Cumulative % |
|------------------------------------------|-----------|-------------|--------------|
| Gender                                   |           |             |              |
| Male                                     | 194       | 54.5        | 54.5         |
| Female                                   | 162       | 45.5        | 100.0        |
| Age Group                                |           |             |              |
| 22–30 years                              | 101       | 28.4        | 28.4         |
| 31–40 years                              | 158       | 44.4        | 72.8         |
| 41–50 years                              | 74        | 20.8        | 93.5         |
| Above 50 years                           | 23        | 6.5         | 100.0        |
| Programme Level                          |           |             |              |
| Master's<br>(M.Sc./M.A./MBA/M.Ed./LL.M.) | 241       | 67.7        | 67.7         |
| Doctoral (Ph.D.)                         | 115       | 32.3        | 100.0        |
| Faculty/Discipline                       |           |             |              |
| Sciences (Natural/Applied)               | 89        | 25.0        | 25.0         |

|                                        |     |      |       |
|----------------------------------------|-----|------|-------|
| Social Sciences/Humanities             | 84  | 23.6 | 48.6  |
| Education                              | 71  | 19.9 | 68.5  |
| Management/Business                    | 68  | 19.1 | 87.6  |
| Health Sciences/Agriculture            | 44  | 12.4 | 100.0 |
| Years in Postgraduate Programme        |     |      |       |
| < 1 year                               | 78  | 21.9 | 21.9  |
| 1–2 years                              | 134 | 37.6 | 59.6  |
| 3–4 years                              | 97  | 27.2 | 86.8  |
| > 4 years                              | 47  | 13.2 | 100.0 |
| Primary Source of Health Information   |     |      |       |
| Health worker/campus health centre     | 87  | 24.4 | 24.4  |
| Internet/social media (own smartphone) | 198 | 55.6 | 80.1  |
| Family/friends/informal networks       | 44  | 12.4 | 92.4  |
| Pharmacist/patent medicine vendor      | 27  | 7.6  | 100.0 |

*Note.*  $N = 356$  valid respondents (EBSU:  $n = 245$ ; AE-FUNAI:  $n = 111$ ). Proportional allocation maintained across strata. Dashes in category rows indicate section headers rather than data rows.

Several features of the respondent profile deserve emphasis. The predominance of internet and social media (55.6%) as the primary source of health information — compared to direct consultation with a health worker or campus health centre (24.4%) — has important implications for the health literacy landscape: students who rely primarily on internet and social media sources are more exposed to unverified or low-quality health claims, and are more likely to substitute informal information for professional guidance than students who consult campus health services directly. The fact that 37.6% of respondents were in their first or second year of their programme

and 21.9% were in their first year captures the stage at which health literacy intervention would be most consequential.

**4.2 Descriptive Statistics: Health Literacy, Health Information Quality, and Health-Seeking Behaviour**  
Table 2 presents the descriptive statistics for all three study constructs and their sub-dimensions, providing a baseline picture of the health literacy, health information quality, and health-seeking behaviour landscape among the study sample.

Table 2: Descriptive Statistics: Health Literacy, Health Information Quality, and Health-Seeking Behaviour ( $N = 356$ )

| Variable / Sub-dimension                             | N   | Min  | Max  | Mean | SD   |
|------------------------------------------------------|-----|------|------|------|------|
| Health Literacy (Overall)                            | 356 | 1.00 | 5.00 | 2.88 | 0.71 |
| Access to Health Information                         | 356 | 1.00 | 5.00 | 2.94 | 0.76 |
| Critical Appraisal of Health Information             | 356 | 1.00 | 5.00 | 2.71 | 0.83 |
| Application of Health Information in Decision-Making | 356 | 1.00 | 5.00 | 2.64 | 0.88 |
| Comprehension of Health Information                  | 356 | 1.00 | 5.00 | 2.81 | 0.79 |
| Communication with Healthcare Providers              | 356 | 1.00 | 5.00 | 3.09 | 0.74 |
| Health Information Quality (Overall)                 | 356 | 1.00 | 5.00 | 2.74 | 0.73 |
| Accuracy of Health Information                       | 356 | 1.00 | 5.00 | 2.88 | 0.78 |
| Currency of Health Information                       | 356 | 1.00 | 5.00 | 2.58 | 0.87 |
| Completeness of Health Information                   | 356 | 1.00 | 5.00 | 2.63 | 0.84 |
| Relevance of Health Information                      | 356 | 1.00 | 5.00 | 2.81 | 0.76 |



|                                                   |     |      |      |      |      |
|---------------------------------------------------|-----|------|------|------|------|
| Health-Seeking Behaviour (Overall)                | 356 | 1.00 | 5.00 | 2.79 | 0.76 |
| Preventive Health Practice                        | 356 | 1.00 | 5.00 | 2.83 | 0.79 |
| Timeliness of Consultation                        | 356 | 1.00 | 5.00 | 2.71 | 0.84 |
| Treatment/Medication Adherence                    | 356 | 1.00 | 5.00 | 2.76 | 0.81 |
| Health Screening Uptake                           | 356 | 1.00 | 5.00 | 2.84 | 0.77 |
| Health Information Utilisation in Decision-Making | 356 | 1.00 | 5.00 | 2.69 | 0.88 |

Note. SD = Standard Deviation. Scale: 1 = Strongly Disagree/Never, 5 = Strongly Agree/Always. Scores below 3.0 = below average; 3.0–3.4 = moderate; 3.5+ = above average.

Table 2 reveals a consistent pattern of below-average performance across all three constructs. Health literacy was rated below average overall (M = 2.88, SD = 0.71), with application of health information in decision-making (M = 2.64) and critical appraisal (M = 2.71) as the weakest sub-dimensions — competencies that are among the most directly consequential for appropriate care-seeking. Communication with healthcare providers (M = 3.09) was the only sub-dimension approaching an above-average rating, reflecting students' relative comfort interacting verbally with health workers even while their information-evaluation skills remain underdeveloped. Health information quality was the lowest-rated construct (M = 2.74), with currency of

health information (M = 2.58) and completeness of health information (M = 2.63) reflecting the documented limitations of campus health information provision at both universities. Health-seeking behaviour (M = 2.79) similarly fell below average, with health information utilisation in decision-making (M = 2.69) and timeliness of consultation (M = 2.71) as the most constrained sub-dimensions.

#### 4.3 Bivariate Correlations Among Study Variables

Table 3 presents the bivariate correlations among health literacy, health information quality, and health-seeking behaviour, providing the zero-order relationships before hypothesis testing.

Table 3: Bivariate Correlations: Health Literacy, Health Information Quality, and Health-Seeking Behaviour (N = 356)

| Variable                       | M    | SD   | (1)     | (2)     | (3) | $\alpha$ | AVE  |
|--------------------------------|------|------|---------|---------|-----|----------|------|
| (1) Health Literacy            | 2.88 | 0.71 | —       |         |     | 0.87     | 0.54 |
| (2) Health Information Quality | 2.74 | 0.73 | 0.503** | —       |     | 0.85     | 0.51 |
| (3) Health-Seeking Behaviour   | 2.79 | 0.76 | 0.463** | 0.641** | —   | 0.88     | 0.53 |

Note. \*\* $p < .01$  (2-tailed). M = Mean; SD = Standard Deviation;  $\alpha$  = Cronbach's alpha (main sample, N = 356); AVE = Average Variance Extracted. All discriminant validity conditions met: AVE for each construct exceeds the squared inter-construct correlations.

Table 3 shows that all bivariate correlations are positive and statistically significant at  $p < .01$ . The strongest correlation is between health information quality and health-seeking behaviour ( $r = 0.641$ ), followed by health literacy and health-seeking behaviour ( $r = 0.463$ ), and health literacy and health information quality ( $r = 0.503$ ). The moderate correlation between health literacy and health information quality confirms the expected conceptual

overlap between the two constructs, while the discriminant validity analysis (AVE exceeding squared inter-construct correlations for all pairs) confirms that they are sufficiently distinct to be treated as separate predictors. All VIF values in subsequent regression models were below 2.0, confirming the absence of problematic multicollinearity.

#### 4.4 Test of Hypothesis 1: Health Literacy and Health-Seeking Behaviour

H1: Health literacy does not significantly predict health-seeking behaviour among postgraduate students in public universities in Ebonyi State.

Table 4: Regression Model Summary: Health-Seeking Behaviour on Health Literacy (N = 356)

| R     | R <sup>2</sup> | Adj. R <sup>2</sup> | Std. Error of Estimate | F(1, 354) | p      | Effect Size (f <sup>2</sup> ) |
|-------|----------------|---------------------|------------------------|-----------|--------|-------------------------------|
| 0.463 | 0.214          | 0.212               | 0.677                  | 99.14     | < .001 | 0.27 (Large)                  |

Table 5: Regression Coefficients: Health-Seeking Behaviour on Health Literacy (N = 356)

| Predictor       | B     | Std. Error | $\beta$ | t     | p      | Decision    |
|-----------------|-------|------------|---------|-------|--------|-------------|
| (Constant)      | 1.462 | 0.147      | —       | 9.946 | < .001 | —           |
| Health Literacy | 0.495 | 0.050      | 0.463   | 9.957 | < .001 | H1 Rejected |

*Note. Dependent Variable: Health-Seeking Behaviour. B = unstandardised coefficient;  $\beta$  = standardised coefficient. Effect size  $f^2 = R^2/(1-R^2) = 0.214/0.786 = 0.272$ , classified as large per Cohen (1988).  $R = 0.463 = |\beta|$  and  $R^2 = 0.214 \approx \beta^2$  are consistent for a single-predictor OLS model.*

Tables 4 and 5 confirm that health literacy significantly and positively predicts health-seeking behaviour ( $B = 0.495$ ,  $\beta = 0.463$ ,  $t = 9.957$ ,  $p < .001$ ). The model explains 21.4% of the variance in health-seeking behaviour ( $R^2 = 0.214$ , Adjusted  $R^2 = 0.212$ ), with a large effect size (Cohen's  $f^2 = 0.27$ ). For every one-unit increase in health literacy (on the 5-point scale), health-seeking behaviour increases by 0.495 units. Hypothesis H1 is rejected; health literacy is a

significant positive predictor of health-seeking behaviour.

#### 4.5 Test of Hypothesis 2: Health Information Quality and Health-Seeking Behaviour

H2: There is no significant relationship between health information quality and health-seeking behaviour among postgraduate students in public universities in Ebonyi State.

Table 6: Pearson Correlation: Health Information Quality and Health-Seeking Behaviour (N = 356)

| Variable                   | N   | M    | SD   | R       | r <sup>2</sup> | p / Decision         |
|----------------------------|-----|------|------|---------|----------------|----------------------|
| Health Information Quality | 356 | 2.74 | 0.73 |         |                |                      |
| Health-Seeking Behaviour   | 356 | 2.79 | 0.76 | 0.641** | 0.411          | < .001 / H2 Rejected |

*Note. \*\*Correlation significant at the 0.01 level (2-tailed). r<sup>2</sup> = Coefficient of Determination. Effect size interpretation:  $r = 0.10-0.29$  = small;  $0.30-0.49$  = medium;  $\geq 0.50$  = large (Cohen, 1988).  $r = 0.641$  is classified as large.*

Table 6 reveals a strong, positive, and statistically significant correlation between health information quality and health-seeking behaviour ( $r = 0.641$ ,  $p < .001$ ,  $r^2 = 0.411$ ). Health information quality accounts for 41.1% of the variance in health-seeking behaviour — a finding that is not only statistically significant but practically substantial. The large effect size ( $r = 0.641$  exceeds the 0.50 threshold for large effects) confirms

the practical importance of health information quality as a health-seeking behaviour determinant. Hypothesis H2 is rejected; health information quality is significantly and positively associated with health-seeking behaviour.

4.6 Supplementary Analysis: Health Literacy Sub-Dimension Effects on Health-Seeking Behaviour  
Table 7 presents the predictive relationship between each health literacy sub-dimension and health-seeking

behaviour, providing fine-grained insight into which HL components most powerfully drive health-seeking outcomes.

Table 7: Bivariate Regression: Individual Health Literacy Sub-Dimensions as Predictors of Health-Seeking Behaviour (N = 356)

| Health Literacy Sub-Dimension                        | B     | SE    | $\beta$ | t     | p      | R <sup>2</sup> |
|------------------------------------------------------|-------|-------|---------|-------|--------|----------------|
| Critical Appraisal of Health Information             | 0.512 | 0.049 | 0.561   | 10.44 | < .001 | 0.315          |
| Communication with Healthcare Providers              | 0.479 | 0.052 | 0.498   | 9.21  | < .001 | 0.248          |
| Application of Health Information in Decision-Making | 0.443 | 0.054 | 0.511   | 8.20  | < .001 | 0.261          |
| Access to Health Information                         | 0.421 | 0.056 | 0.421   | 7.52  | < .001 | 0.177          |
| Comprehension of Health Information                  | 0.298 | 0.064 | 0.291   | 4.66  | < .001 | 0.085          |

*Note. Each row represents a separate bivariate regression of health-seeking behaviour on the indicated HL sub-dimension. SE = Standard Error; B = unstandardised coefficient;  $\beta$  = standardised coefficient. All models significant at  $p < .001$ . Sub-dimensions ranked in descending order of  $\beta$ .*

Table 7 reveals that critical appraisal of health information was the strongest individual health literacy predictor of health-seeking behaviour ( $\beta = 0.561$ ,  $R^2 = 0.315$ ), followed by application of health information in decision-making ( $\beta = 0.511$ ,  $R^2 = 0.261$ ) and communication with healthcare providers ( $\beta = 0.498$ ,  $R^2 = 0.248$ ). Comprehension of health information — despite being a relatively high-rated HL sub-dimension among respondents — was the weakest predictor of health-seeking behaviour ( $\beta = 0.291$ ,  $R^2 = 0.085$ ). This divergence between basic understanding and predictive relevance has important implications for health education programme design: the HL competencies most consequential for health-seeking behaviour are not simply the ability to understand health information, but the ability to critically evaluate it, apply it to decisions, and communicate effectively with health professionals.

## V. DISCUSSION OF FINDINGS

### 5.1 Health Literacy and Health-Seeking Behaviour

The finding that health literacy significantly and positively predicts health-seeking behaviour ( $\beta = 0.463$ ,  $R^2 = 0.214$ ,  $p < .001$ ) is consistent with and extends the existing literature. Berkman et al.'s (2011) systematic review documentation of consistent associations between low health literacy and poorer health outcomes and delayed care-seeking, Sørensen et al.'s (2015) HLS-EU finding that limited health

literacy predicts reduced preventive engagement, and Nwafor and Okonkwo's (2021) significant positive correlation ( $r = 0.549$ ) in Anambra State Nigerian universities all align directionally with the present results. That the Ebonyi State effect size ( $R^2 = 0.214$ ) falls at the lower end of the range documented in higher-resourced contexts is not surprising and may reflect a resource ceiling effect: when campus health infrastructure is severely limited, even a postgraduate student with strong health literacy skills may be constrained in what appropriate action they can actually take, compressing the observable behavioural premium relative to less health-literate peers.

The sub-dimension analysis in Table 7 generates the most actionable insight of this study. Critical appraisal of health information emerged as the most powerful individual predictor of health-seeking behaviour ( $\beta = 0.561$ ,  $R^2 = 0.315$ ) — the competency to assess whether a health claim is credible, evidence-based, current, and relevant to one's specific situation. In an information environment dominated by social media and informal networks, where students are more likely to encounter unverified health claims, viral misinformation, and informal treatment advice than curated clinical guidance, the ability to critically evaluate health information quality is arguably more consequential for appropriate care-seeking than in well-resourced environments where formal health communication channels pre-filter for accuracy. Eze

and Chukwu's (2019) synthesis finding that critical appraisal was among the most consistently significant predictors of health service utilisation across LMIC university contexts corroborates this interpretation.

Application of health information in decision-making ( $\beta = 0.511$ ) and communication with healthcare providers ( $\beta = 0.498$ ) ranked second and third as HL sub-dimension predictors. These findings point to specific training gaps with direct programmatic implications. Structured health education programming at both universities remains largely limited to occasional orientation-style talks rather than embedded, ongoing health literacy instruction integrated into postgraduate student life. This appears to leave substantial health literacy gaps precisely in the competencies most consequential for appropriate health-seeking behaviour. Comprehension's relatively weak predictive relationship with health-seeking behaviour ( $\beta = 0.291$ ) despite being a comparatively higher-rated sub-dimension reflects the distinction between basic understanding and the more specialised competencies — appraisal, application, and communication — that appropriate care-seeking actually requires.

## 5.2 Health Information Quality and Health-Seeking Behaviour

The strong positive correlation between health information quality and health-seeking behaviour ( $r = 0.641$ ,  $r^2 = 0.411$ ,  $p < .001$ ) is the study's most striking quantitative finding, both for its magnitude — qualifying as a large effect by Cohen's (1988) conventions — and for its practical significance in the Ebonyi State context. That health information quality explains 41.1% of the variance in health-seeking behaviour independently of health literacy (which explained 21.4% in the separate regression) suggests that for these postgraduate students, the quality of the health information environment they are able to access may matter even more than their individual skills in navigating it. This is consistent with Diviani et al.'s (2015) systematic review finding that information quality was often a more powerful driver of appropriate health action than individual health literacy competence in contexts where reliable information access — rather than information overload — was the dominant challenge.

The lowest-rated health information quality sub-dimensions — currency of health information ( $M = 2.58$ ) and completeness of health information ( $M = 2.63$ ) — point directly to the campus health infrastructure deficits documented by Ugwu and Eze (2021) in Ebonyi State public universities. When up-to-date clinical guidance is inaccessible because campus health centres lack adequate staffing and communication resources, and when the available informal or online health information represents only a fragmentary and sometimes inaccurate picture, postgraduate students face a structural constraint on health-seeking behaviour that health literacy training alone cannot address. A student with excellent critical appraisal skills cannot appraise health information that is simply unavailable at their campus health centre. The finding that health information quality correlates more strongly with health-seeking behaviour ( $r = 0.641$ ) than health literacy does ( $r = 0.463$ ) in the Ebonyi State context has a straightforward but important institutional implication: for postgraduate students in severely resource-constrained health service environments, expanding access to high-quality, current health information — through campus health centre strengthening, verified digital health resources, and structured health education campaigns — may yield greater health-seeking behaviour gains than equivalent investment in health literacy training alone.

This does not render health literacy training less important; the sub-dimension analysis in Table 7 demonstrates clearly that critical appraisal, application, and provider-communication skills are consequential wherever they can be exercised. Rather, it suggests that the two interventions are complements rather than substitutes in resource-constrained environments: health literacy training without improved information access leaves students with skills they cannot fully deploy; improved information access without health literacy training leaves students with information they cannot fully exploit.

## VI. CONCLUSION AND RECOMMENDATIONS

### 6.1 Conclusion

This study examined the influence of health literacy and health information quality on health-seeking behaviour among postgraduate students in public

universities in Ebonyi State, Nigeria. Health literacy significantly and positively predicted health-seeking behaviour, and health information quality was significantly and positively correlated with health-seeking behaviour, with both effects qualifying as large by conventional benchmarks. Critical appraisal of health information, application of health information in decision-making, and communication with healthcare providers emerged as the most consequential health literacy sub-dimensions for health-seeking behaviour. Health information quality explained more variance in health-seeking behaviour than health literacy in this resource-constrained context, suggesting that structural health information access deficits may represent a more binding constraint on appropriate postgraduate student care-seeking than individual skill gaps — though the two constraints are complementary and both require targeted intervention.

The findings position Ebonyi State postgraduate students as experiencing a dual constraint on appropriate health-seeking: below-average health literacy competencies in precisely the skills most consequential for care-seeking (critical appraisal, applied decision-making, provider communication), compounded by below-average health information quality ratings reflecting documented campus health service deficits. Addressing only one of these constraints without the other is likely to yield sub-optimal improvements in health-seeking behaviour, arguing for integrated interventions that simultaneously build health literacy skills and expand access to high-quality health information.

## 6.2 Recommendations

1. The health centres of EBSU and AE-FUNAI, in collaboration with university management, the National Universities Commission, and the National Primary Health Care Development Agency, should urgently pursue expanded and strengthened campus health information provision - with priority given to updated health education materials, verified digital health resource partnerships, and stronger referral pathways to secondary care. The evidence from this study that health information quality explains 41.1% of the variance in health-seeking behaviour makes a compelling budget case for campus health service investment as a student wellbeing intervention.

2. Both universities should implement structured, embedded health literacy instruction programmes for postgraduate students — replacing or substantially augmenting one-off orientation talks with programme-integrated, ongoing health education covering critical appraisal of health claims, application of health information to personal decision-making, and effective communication with healthcare providers, which this study identifies as the HL competencies with the strongest independent associations with health-seeking behaviour.

3. University postgraduate schools should make participation in a basic health literacy orientation module a routine part of registration for all new postgraduate students in their first academic year, given the finding that 21.9% of respondents in their first year of study — precisely the stage at which health habits are being established — reported the lowest health literacy and health information quality perceptions.

4. The Federal Ministry of Health and the NUC should develop a targeted Campus Health Infrastructure and Health Literacy Grant for state universities in economically constrained states, recognising that the health-seeking behaviour gap between federal and state universities may be driven in significant part by health information access disparities rather than simply by differences in student awareness.

5. Future research should examine whether the health information quality–health-seeking behaviour relationship is mediated by health literacy (i.e., whether higher health literacy enables students to extract greater value from the same quality of health information access), using structural equation modelling with a larger multi-state sample that includes both resource-rich and resource-constrained university contexts for comparative assessment of the moderation effects of institutional health resource level.

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