

Pharmacological Literacy as Curriculum Input for Functional Health Education Programme: Perception of Health Educators in Nigeria

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Abstract

Health Education (HE) was established as a distinct programme from Physical Education less than three decades ago in Nigeria to address the country's growing preventive healthcare needs, as recommended by the World Health Organization (WHO) at the Alma Ata Conference in 1978. Despite multiple curriculum reviews aimed at aligning with national health philosophies, significant gaps remain in addressing both communicable and non-communicable diseases. The inclusion of pharmacology in health education is increasingly recognized as essential for enhancing healthcare outcomes. This study investigated the perceptions of health education students regarding the inclusion of pharmacological literacy in the Functional Health Education program in Nigeria. Utilizing a descriptive survey research design, the study addressed three research questions and sampled 1,892 participants. The instrument used was the Inclusion of Pharmacological Literacy Questionnaire (IPLQ). The findings revealed a positive perception among health education students towards incorporating pharmacological literacy into the curriculum. Consequently, it is recommended that the National University Commission (NUC) incorporates Pharmacological Health Education into Nigeria's academic programme in Health Education.

Keywords: Curriculum input, Health education, Pharmacological literacy

Introduction

Health Education as a programme of study in universities is growing so fast in Nigeria that most public and private colleges of health technology, colleges of education, and universities are running the course with good student patronage and increased enrolment. This phenomenon is a result of the long overdue need for the course to stand alone as a course of study because of its importance as one of the tools to meet the preventive health needs of the populace. This has been the focal point of health care strategies using Primary Health Care (PHC) as a working index identified by the World Health Organization (WHO) at the Alma Ata Conference since 1978. Nigeria as a country is making efforts to work in consonance with this WHO strategy since inception, by finding the various ways and means to achieve health for all and to meet the national health philosophy and needs, identified the teaching of health education as a stand-alone course to be studied in schools and universities as proposed at the Alma-Ata conference as a driving force for preventive medicine. For health education to achieve the goals enumerated, it has to continually undergo curricular review and update which implies that various other related disciplines must form bulk of the content areas to be looked at.

The study of anatomy and physiology, medical psychology, drug education, epidemiology, vital statistics, nutrition, medical anthropology, and in fact, the introduction of pharmacology is becoming inevitable to make health education more functional in achieving its predetermined set goals of diseases prevention and building positive health behaviour for health promotion.

Many health education professionals are working to facilitate the modification of health behaviours which has led to the relentless search for an appropriate definition of health education. Downie, Fyfe and Tannahill (1990) defined it as a communication activity aimed at enhancing positive health and preventing or diminishing ill health in individuals and groups by influencing their beliefs, attitudes, and behaviour. The World Health Organisation (1998) defined health education as comprising consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge and developing life skills which are conducive for individual and community health. Gold and Miner (2002) defined health education as any combination of planned learning experiences based on sound theories that provide individuals, group, and communities the opportunity to acquire information and skills needed to make quality health decisions. Green and Kreuten (2005) defined health education as any planned combination of learning experiences designed to predispose, enable and reinforce voluntary behaviour conducive to health in individuals, groups or communities. Health education is any combination of planned learning experiences using evidenced based practices and/or sound theories that provide the opportunity to acquire knowledge, attitudes and skills needed to adopt and maintain healthy behaviour (Joint Committee on health, 2012).

Critically looking at the various definitions proposed, some fundamental indices are very clear. In the first instance, health education is systematic, planned application which qualifies it as a science (Sharma, 2017). Secondly, the delivery of health education involves a set of techniques and not just one. Before now, health education encompassed a wider range of activities including community mobilization, networking and advocacy which are today embodied in the term health promotion. It is obvious to note that health education is a dynamic program of study that should continually evolve to meet the changing world through periodic review of the curriculum.

Pharmacology is the scientific study of the effects of drugs and chemicals on living organisms, and the study of pharmacology is interdisciplinary. Its study explores many aspects of drug discovery, development, and preclinical drug safety which integrate knowledge from multiple scientific disciplines including chemistry, biochemistry, biology, and physiology providing a significant positive impact on human health (Hobbing, 2023). The knowledge of the five branches of pharmacology: pharmacokinetics which involves the understanding of what the body does with the drug when taken; pharmacodynamics which is the biochemical and physical effects of drugs and how drug works in the body system; pharmacotherapeutics which is the use of drugs for both prophylactic and therapeutic purposes; pharmacognosy which is the study of natural resources of drugs which include plants animals; toxicology which involves the study of the toxic effects of drug on the body system. The afore-listed branches of pharmacology are related to effective training in health education at least at the introductory level for an improved understanding of health education principles for positive change in health behaviour also the knowledge of drugs for improved patient adherence to a therapeutic regimen is important (Beusekom, Grootens, Bos, Guchelaar & Broek, 2016).

Pharmacological literacy can be defined as acquiring the knowledge and skills needed to successfully navigate the world in which we live - a world full of drug-related pressures, promises, and panaceas. Introductory knowledge of pharmacology will improve career opportunities for health education graduates both for self-employment and paid employment at pharmaceutical outfits. Students need to develop the competencies to survive and thrive in this dynamic world (University of Victoria, 2015; Okueso & Okanlawon, 2016; Verveloet, Dijk, Rademakers, Bouvy, DeSmet., Philbert, & Koster, 2018; Silva, Nogueira, Cavalcante, Felipe, Morais, Moreira & Oliveira, 2022).

Objectives of the Study

To find out:

1. The opinion of the students of health education on the need to include pharmacological literacy into health education curriculum.
2. If the students will perceive the introduction of pharmacology as a course that will make health education more functional.
3. If the learning of pharmacology will improve career opportunities of graduate health educators for further study and increase hiring opportunities.

Statement of Problem

Health education as an emerging course of study requires continuous review to meet the ever-dynamic world. As practitioners in health promotion and health education, students frequently ask questions relating to career opportunities and advancement in further studies especially in the areas of public health. Graduate students from the Faculty of Education are also complaining of discrimination during job interviews and at work when placed side-by-side with graduates of health education from teaching hospitals and colleges of basic medical sciences because of factors ranging from curricula deficit, course content taught at schools and exposure to practical aspects of public to community health lacking some core courses that should be in health education. Hence the study was carried out to investigate the opinion of practitioners on the inclusion of pharmacological literacy to make health education more functional so that process can be initiated to include Introduction to Pharmacology as a course of study in health education in the Faculty of Education in Nigeria.

Research Questions

1. Which of the following content areas of pharmacology is preferred by undergraduate health educators to be included in the curriculum?
2. What is the perception of students of health education on the role of Pharmacology as a needed course in making health education more functional?
3. What is the perceived knowledge of students of health education on pharmacology as an attribute to the course to improve their career opportunities?

Methodology

Descriptive survey research design was adopted for the study while multi stage sampling procedure was used to select the sample used for the study. In the first instance, a simple random sampling technique was used to select five universities offering health education as a course of study in the southern part of Nigeria. A purposive sampling technique was adopted to select students of health education from the Department of Human Kinetics and Health Education from the Faculty of Education. Internet survey administered a questionnaire titled *Inclusion of Pharmaceutical Literacy Questionnaire (IPLQ)* online for the participants to respond to the question items based on their opinion on the subject. The instrument was validated with a reliability of $r=0.823$ which was trial tested among selected student health educators from Northern Nigeria. To answer the three research questions asked based on the objectives of the study, descriptive statistics of frequency count and percentages were used for the study to specifically describe the phenomenon of the participant's perception on the application of pharmacological literacy for making health education more functional.

Findings and Interpretation

Table 1: Distribution of Respondents based on Demographic Information

Demographic Information	Frequency	%
Gender		
Male	448	23.7
Female	1444	76.3
Age Group		
Less than 20 years	404	21.4
20-25 years	1356	71.7
26-30 years	124	6.6
Above 30 years	8	0.4
Level		
100	228	12.1
200	736	38.9
300	480	25.4
400	448	23.7

Table 1 above presents the demographic characteristics of health educators in public universities in Ogun State. Findings indicated that female gender dominated the sample population as indicated by 76.3% while male represent only 23.7%. Similarly, in terms of age group, majority were between 20-25 years of age as indicated by 71.7%, followed by 20 years of age or less as indicated by 21.4% then by 26-30 years as indicated by 6.6%. Findings further revealed that 38.9% were 200 level students and 25.4% were 300 level students while 23.7% were 400 level students.

Research Question One: Which of the following areas of pharmacology content will undergraduate health educators want to be included in the curriculum if introduced?

Table 2: Descriptive statistics showing areas of pharmacology content needed to be included in the curriculum if introduced

S/N	Content Areas	Yes		No	
		Freq	%	Freq	%
1	Vaccines use and application	1820	96.2	72	3.8
2	Cardiovascular drugs' use and application	1500	79.3	392	20.7
3	Musculoskeletal drugs' use and application	1500	70.3	392	20.7
4	Obstetric and Gynaecological drugs' use and application	1468	77.6	424	22.4
5	Gastrointestinal drugs' use and application	1536	81.2	356	18.8
6	Antibiotics use and application	1812	95.8	80	4.2
7	Analgesic drugs' use and application	1560	82.5	332	17.5
8	Haematinic drugs' use and application	1380	72.9	512	27.1

S/N	Content Areas	Yes		No	
		Freq	%	Freq	%
9	Antipyretic drugs' use and application	1396	73.8	496	26.2
10	Addictive drug drugs' use and application	1348	71.2	544	28.8

Table 2 above presents the descriptive statistics showing the areas of pharmacology content that undergraduate health educators will want to be included in the curriculum if introduced. The findings above indicated that all the ten (10) listed content areas were perceived by the undergraduate health educators as a must to be included in the curriculum if introduced. This includes: Vaccine use and application, Cardiovascular drug use, and application, Musculoskeletal drugs use and application, Obstetric and Gynaecological drug use and application, Gastrointestinal drugs use and application, Antibiotics use and application, Analgesic drugs use and application, Haematinic drugs' use and application, Antipyretic drugs' use and application and Addictive drug drugs' use and application.

Research Question Two: 2. What is the perception of health education students on the role of Pharmacology as a needed course in making health education more functional?

Table 3: Descriptive statistics showing whether students of Health Education will perceive Pharmacology as a needed course in making health education more functional

S/N	Perceptions	SA		A		D		SD	
		Freq	%	Freq	%	Freq	%	Freq	%
1	Introduction of pharmacology will improve general knowledge of drug classification	1052	55.6	836	44.2	4	0.2	-	-
2	Knowledge of pharmacology will boost public health knowledge of students of health education	1020	53.9	848	44.8	24	1.3	-	-
3	Pharmacology as a course is a long-expected course of study in health education	672	35.5	1096	57.9	124	6.6	-	-
4	Pharmacology as a course of study is only needed by doctor and nurses	404	21.4	328	17.3	116	61.3	-	-
5	Pharmacology has nothing to do with health education as a programme of study	548	29.0	172	9.1	1172	61.9	-	-
6	Introduction of Pharmacology as a course of study will amount to share duplication of courses in health education	436	23.0	404	21.4	1052	55.6	-	-

The descriptive statistics presented in Table 3 above explore the perceptions of students in Health Education regarding the necessity of incorporating Pharmacology into their curriculum to enhance the functionality of health education. A significant majority of students, 1052 (55.6%), strongly agree that the introduction of Pharmacology will enhance their general knowledge of drug classification. Additionally, 836 students (44.2%) agree with this statement, while only 4 students (0.2%) disagree. This overwhelming support suggests that students recognize the value of Pharmacology in expanding their understanding of drugs. Similarly, 1020 students (53.9%) strongly believe that Pharmacology will boost their public health knowledge, with another 848 students (44.8%) in agreement. Only a small fraction, 24 students (1.3%), disagree. This consensus further underscores the perceived benefits of Pharmacology in enriching public health education. When asked if Pharmacology has long been expected as a course of study in health education, 672 students (35.5%) strongly agree, and a more significant number, 1096 students (57.9%), agree. However, 124 students (6.6%) disagree, indicating some level of contention but overall strong support.

The perception that Pharmacology is only necessary for doctors and nurses is not widely held among the students. Only 404 students (21.4%) strongly agree and 328 students (17.3%) agree with this notion, whereas a substantial majority, 116 students (61.3%), disagree, suggesting that students see the relevance of Pharmacology beyond traditional medical professions. The belief that Pharmacology has no connection to health education is also not prevalent. A majority of students, 1172 (61.9%), disagree with this statement, while 548 students (29.0%) strongly agree and 172 students (9.1%) agree, reflecting that most students see a significant relationship between Pharmacology and their field of study. Concerning whether the introduction of Pharmacology would lead to unnecessary duplication of courses, 436 students (23.0%) strongly agree and 404 students (21.4%) agree. However, a majority of 1052 students (55.6%) disagree, indicating that most students do not view Pharmacology as redundant within their curriculum.

In summary, the findings suggest that students of Health Education overwhelmingly perceive Pharmacology as a valuable addition to their curriculum, enhancing their knowledge of drug classification and public health. While there is some concern about the necessity and potential redundancy of the course, the predominant sentiment is in favour of its inclusion.

Research Question Three: What is the perceived knowledge of students of health education of pharmacology as an attribute to the course to improve their career opportunity?

Table 4: Descriptive statistics showing students of health education perceived knowledge of pharmacology as a course to improve their career opportunity

S/N	Perceptions	SA		A		D		SD	
		Freq	%	Freq	%	Freq	%	Freq	%
1	Pharmacological knowledge will broaden job opportunities for health educators.	892	47.1	896	47.4	104	5.5	-	-
2	Pharmaceutical companies will hire graduate health educators with background knowledge of pharmacology.	636	33.6	1112	58.6	144	7.6	-	-
3	Knowledge of pharmacology will serve as an opportunity for a graduate health educator to be given direct admission to study pharmacology in any university.	568	30.0	1132	59.8	192	10.1	-	-
4	Knowledge of pharmacology will not in any way improve career opportunities for graduate health educators.	656	34.7	260	13.7	976	51.6	-	-
5	Pharmacological knowledge will broaden job opportunities for health educators.	756	40.0	1032	54.5	104	5.5	-	-

Table 4 above revealed that the overwhelming majority of students believe that knowledge of pharmacology will broaden their job opportunities. With 47.1% strongly agreeing and 47.4% agreeing, a total of 94.5% of respondents see a positive correlation between pharmacological knowledge and enhanced career prospects. A significant majority of students (92.2%) agree that having a background in pharmacology would increase their chances of being hired by pharmaceutical companies. This reflects a strong belief in the value of pharmacological knowledge in the health education field. Interestingly, this item shows that 51.6% of students disagree with the statement that pharmacological knowledge will not improve their career opportunities, indicating a predominant belief in its positive impact in promoting career opportunities in health education. This repetition emphasizes the previous finding with slight variations, reaffirming the positive perception students have towards pharmacological knowledge in enhancing their job prospects.

Conclusively, the descriptive statistics strongly suggest that students of health education perceive pharmacology as a significant asset to their career development. The high percentages of agreement across multiple statements underline a consensus that pharmacological knowledge not only broadens job opportunities but also enhances employability in pharmaceutical companies as medical sales representative and academic advancement in pharmacology which can broaden their integration into working in the hospital setting as professional. The data highlights the importance of integrating pharmacology into health education curricula to meet students' career aspirations and industry expectations.

Discussion

The findings in the study revealed that all the items of pharmacological content presented to the participants to be included in the curriculum were favoured to be included in the curriculum but four of the items: Vaccines (96.2%), Gastrointestinal drugs (81.2%), Antibiotics (96.8%) and Analgesics (82.5%) were the most favoured to be included in the curriculum as the positive responses were above 80% in favour of their inclusion in the pharmacological literacy curriculum content for Functional Health Education. It is therefore important to note that when describing the content of Introduction to Pharmacology as core curriculum input, all the content should be considered as areas of interest to the students. The finding of the study that has antibiotics as the drugs that should be added to the list of the content in pharmacological literacy is in agreement with the findings of previous study that agrees that literacy about antibiotics is important because of increased rate of misuse (Aslam, Gajdacs, Zin, Abrahmam, Ahmed, Zafer et al, 2020)

The findings revealed that the participants perceived the introduction of pharmacological literacy to the health education programme would make it more functional hence the inclusion of the course, Introduction to Pharmacology in the curriculum for health education in the Faculty of Education in the Universities of Nigeria. The need to include pharmacology in health education curriculum is becoming inevitable as students are yearning for improved knowledge of pharmacological components to enhance awareness about, prophylactic diagnostic, therapeutic drugs. The finding in the study also agrees with the position of Centre for Disease Control and Prevention (2019) that reported the continuous need for health communication for effective health literacy which the findings of the study agrees that pharmacological literacy will boost knowledge for better society.

Findings of the study showed that the participants perceived the introduction of pharmacological literacy to health education will improve career opportunities for graduate health educators and promote admission opportunities for further studies in related public health studies. The inclusion of Pharmacology will broaden knowledge of health educators and improve their opportunities in employment especially in pharmaceutical and other allied companies. The work of Xu, Wang, Li, Li, Wang, Wu, Hao, and Wang, (2022) affirms the result of the finding that pharmaceutical literacy is imminent for the young ones for improved knowledge and better public health practices.

Conclusion and Recommendations

The descriptive statistical analysis was conducted to determine whether students of health education perceive pharmacology as an essential course for enhancing the functionality of health education. The findings indicate significant support for the integration of pharmacology into the health education curriculum. The study revealed that there is need for continuous curricula review in order to meet the ever-dynamic world and health education as an emerging course of study. The curricula require an upgrade to meet the societal needs and to be aligned with the global best practices. The inclusion of Pharmacology in health education programme has been perceived to improve health education programme and make it more functional since it will improve career opportunities and broaden chances of getting admitted into several other health-related courses at universities for further studies and also employed by pharmaceutical outlets for employment. It is therefore recommended that curriculum development and planners be informed of the need to include pharmacology as a course of study in health education to make it more functional.

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