

An evaluation of the knowledge and utilization of the essential medicines list among health professionals in a tertiary institution in South-South, Nigeria.

Stephen A. Ayinbuowan^{1,2}, Ambrose O. Isah^{1,2}

Abstract

Background: The concept of essential drugs is based on the premise that a limited number of effective, safe, high quality, reasonably priced drugs are capable of satisfying the priority health care needs of the majority of the population. The Essential Medicines list is intended for use across the three levels of the health care system to promote higher quality care, better management of medicines and a more cost-effective use of available health resources. This study assessed the current status, understanding and level of penetration of the concept amongst the health care providers in a tertiary healthcare facility in South-South, Nigeria, after four decades of its introduction.

Methods: It is a cross-sectional, descriptive study conducted between January and July 2017..

Results: A response rate of 92.7% (278/300) was obtained for questionnaires distributed. More than half of the respondents were doctors (176; 63.3%). Nurses and pharmacists were

77(27.7%) and 24(8.6%) respectively. The mean age of the respondents was 34.8 ± 7.3 . Males and females were almost equal in this study (males 47.1%, females 49.6%). There was significant awareness of the EML among all the health professionals ($p=0.001$). Pharmacist had better understanding of the concept of the EML document ($p=0.001$) and also exhibited a positive attitude in making use of the document in their daily practice ($p<0.001$) when compared with the doctors and nurses.

Conclusion: This study found a high level of awareness of the EML among the health professionals, however it did not translate to their knowledge and utilization of the document.

Key words: Essential medicines list, Health professionals, Nigeria

Highland Med Res J 2020;20(1):1-4

Introduction

The World Health Organization (WHO) in 1975, at the 28th World Health Assembly (WHA) defined Essential Medicines as "those drugs that satisfy the health care needs of the majority of the population and should therefore be available at all times, in adequate dosage forms at a cost that the individuals and the community can afford."¹ They are basic, indispensable and necessary.² The concept of essential medicines is based on the premise that a limited number of effective, safe, high quality, reasonably priced drugs is capable of satisfying the priority health care needs of the majority of the population. This concept emerged from the limited capability of poorer nations to afford potential drugs to combat basic diseases. There was a growing gap between the potential of drugs to cure diseases and the ability of the health system of these nations to meet such needs. At all levels of the health care system of poorer nations was the lack of essential medicines in sufficient amount.³ The Essential Medicines concept crystallized into an operational drug supply program four decades ago and can be regarded as one of the major contributions of the

WHO to healthcare in the seven decades of its existence. The Action Programme on Essential Medicines, and the establishment of a funding mechanism ensured supply of medicines in resource limited settings. Other measures ensured a rational, safe and cost-effective use of medicines.

This first list published as the WHO model formulary in 1977 contained 186 life saving medicines.⁴ This list is updated every two years to reflect evolving public health challenges, thus guaranteeing suitability of available medicines to the health care needs of the country. The process of updating the WHO list is usually a transparent process that follows a systematic approach of collecting and reviewing evidence.⁵ This process was intended to serve as a model for developing and updating national and institutional Essential Medicines List (often in combination with the Standard Treatment Guideline) and stratified according to the level of care. This list contains the most efficacious, safe, and cost-effective medicines for priority conditions. It maximizes the benefit of medicines from the perspective of the public in a context of limited resources. The Essential Medicines Concept has gained widespread acceptance among nations including developed nations with 4 out of 5 countries having adopted a National Essential Medicines list based on WHO recommendation.⁶

The promulgation of the decree No 43 (1989) gave legal backing to the adoption of the Essential drugs program within the health care system in Nigeria.⁷ The National Essential Medicines list (EML) was first introduced in 1989, and contained 205 medicines for

¹Clinical Pharmacology and Therapeutic Unit, Department of Medicine, University of Benin Teaching Hospital, Benin City.

²Department of Clinical Pharmacology and Therapeutics, University of Benin, Benin City, Nigeria.

All correspondences to:

Dr Stephen Ayinbuomwan

Email: stephenayinbuomwan@yahoo.com

public health centres and hospitals.⁸ This document has had six revisions following the first publication, with the 6th edition launched November 2017. The process for updating the list followed the initial revision of the standard treatment guideline and extensive consultation with all stakeholders, including public health programmes. The list is intended for use across the three levels of the health care system in order to promote higher quality care, better management of medicines (including improved quality of prescribed medicines) and a more cost-effective use of available health resources. It is therefore appropriate for health care providers not only to have knowledge of this document but to ensure its utilization in their daily practice.

There is presently paucity of studies evaluating the use of this important therapeutic tool among health care providers especially in the tertiary institutions within the country. The only study available online was that of Hassan et al in North-Central Nigeria, which was limited to prescribers only.⁹ This study is therefore intended to assess the current status, understanding and level of penetration of the concept amongst the health care providers in a tertiary healthcare facility after four decades of its introduction.

Methods

This cross-sectional, descriptive study was carried out at the University of Benin Teaching Hospital (UBTH), in Benin City, Edo state, South-South, Nigeria. This is a Federal Government tertiary hospital with a 850 bed space capacity. A self administered semi-structured questionnaire was designed to assess health professionals awareness, knowledge and attitude towards the implementation of the National EML within the hospital. This questionnaire contained four sections assessing the following; the socio-demographics of the participants, their awareness of the EML, publication and understanding of the EM; the perceived advantages and disadvantages and suggestions on how to improve the programme, and lastly their attitude regarding implementation in their daily practice. It was distributed to all health professionals who consented to the study (including doctors, pharmacists and nurses) in the clinical departments over a seven month period - January to July 2017.

The data were analyzed using the SPSS software (Statistical Package for Social Sciences) version 20 (IBM Chicago). Analysis was done systematically and results presented descriptively represented as the frequency (percentage) and mean \pm SD. Chi-square test was used to compare the knowledge and attitude of the health professionals.

Results

A total of 278 health care professionals out of the 300 who received the questionnaires were willing to participate in the study; response rate was 92.7%

(278/300). More than half of the respondents were doctors (176;63.3%). Nurses and pharmacists were 77(27.7%) and 24(8.6%) respectively. The mean age of the respondents was 34.8 ± 7.3 (SD), with a range of 19-55 years. Males and females were almost equal in this study (males 47.1%, females 49.6%), with nine respondents omitting their sex, as seen in Table 1. The number of years following graduation was longest with the nurses (12.5 ± 8.5), followed by doctors (7.4 ± 5.0) and then pharmacists (5.4 ± 5.1). There was significant awareness of the EML among all the health professionals ($p=0.001$), however this was highest among the pharmacists where there was 100% awareness of the document. Eighty percent of those aware of the EML had seen it at least once. Of the 113 respondents who were taught about the EML, 85(75.2%) was during undergraduate training. Table 2.

Table 3 shows health professional responses to questions regarding knowledge of the EML. Pharmacists had better understanding of the concept of the EML document ($p=0.001$). However knowledge of the history of both the WHO and the National EML was poor, with no satisfactory answer regarding the edition of the current EML. The use of EML by health professionals is seen in Table 4. A larger proportion of pharmacists used the document in their daily practice ($p<0.001$) when compared with the doctors and nurses. The view that the essential medicines programme had not been successful within the country was held by 89% of respondents

Table1:Demographic characteristics of health care professionals.

Total Respondents	Numbers of HCP (%) (Total 278)
Age	
Less than 40years	193 (69.4%)
Above 40 years	85 (30.6%)
Mean \pm SD	34.8 ± 7.3
Range(years)	19 - 56 years
Sex	
Males	131 (47.1)
Females	138 (49.6)
No response	9 (3.2)
Designation	
Doctors	176 (63.3)
Nurses	77 (27.7)
Pharmacist	24 (8.6)
Years of service	
0-5	105(37.8%)
6-10	72 (25.9%)
11-15	50 (18.0)
>16	30 (10.8)

Table 2: Health Care professionals responses to questions about awareness of the EML

Variables	HCP Responses			P value
	Yes	No	Total	P value
Awareness of EML in Nigeria	n (%)	n (%)	n (%)	
Doctors	100 (64.5)	55 (35.5)	155 (100.0)	0.001
Nurses	33 (56.9)	25 (43.1)	58 (100.0)	
Pharmacist	22 (100.0)	0 (0.0)	22 (100.0)	
Were you taught about EML?	Yes	No	Total	
Doctors	69 (44.5)	86 (55.5)	155 (100.0)	0.000
Nurses	24 (41.4)	34 (58.6)	58 (100.0)	
Pharmacists	20 (90.9)	2 (1.6)	22 (100.0)	
When were you taught about EML?	After graduation	As student	Total	
Doctors	9 (15.0)	51 (85.0)	60 (100.0)	
Nurses	5 (22.7)	17 (77.3)	22 (100.0)	
Pharmacists	2 (10.5)	17 (89.5)	19 (100.0)	

Table 3: The proportion of health professionals demonstrating knowledge of the EML

Variables	HCP Responses				P value
	Satis- factory	Not satis- factory	DNK	Total	P value
What year was EML introduced globally					
Doctors	6 (3.9)	5 (3.2)	144 (92.9)	155 (100.0)	
Nurses	7 (12.1)	3 (5.2)	48 (82.8)	58 (100.0)	0.224
Pharmacists	2 (9.1)	1 (4.5)	19 (86.4)	22 (100.0)	
What year did Nigerian government develop her own EML					
Doctors	1 (0.6)	9 (5.8)	145 (93.5)	155 (100.0)	
Nurses	2 (3.4)	5 (8.6)	51 (87.9)	58 (100.0)	0.444
Pharmacists	0 (0.0)	1 (4.5)	21 (95.5)	22 (100.0)	
Edition of EML in use					
Doctors	0 (0.0)	12 (7.7)	143 (92.3)	155 (100.0)	
Nurses	0 (0.0)	6 (10.3)	52 (89.7)	58 (100.0)	0.085
Pharmacists	0 (0.0)	5 (22.7)	17 (77.3)	22 (100.0)	
Definition of Essential Medicines					
Doctors	47 (30.3)	30 (19.4)	78 (50.3)	155 (100.0)	
Nurses	12 (20.7)	7 (12.1)	39 (67.2)	58 (100.0)	0.000
Pharmacists	18 (81.8)	2 (9.1)	2 (9.1)	22 (100.0)	
Advantages of EML					
Doctors	27 (17.4)	7 (4.5)	121 (78.1)	155 (100.0)	
Nurses	1 (1.7)	1 (1.7)	56 (96.6)	58 (100.0)	0.001
Pharmacists	13 (59.1)	0 (0.0)	9 (40.9)	22 (100.0)	
Frequency of revision of EML					
Doctors	34 (21.9)	121 (78.1)		155 (100.0)	
Nurses	6 (10.3)	52 (89.7)		58 (100.0)	0.059
Pharmacists	7 (31.8)	15 (68.2)		22 (100.0)	

Table 4: Use of EML by health professionals

Variables	HCP Responses			P value
	Yes	No	Total	P value
Do you presently use EML				
Doctors	28 (18.1)	126 (81.3)	154 (100.0)	
Nurses	3 (5.2)	55 (94.8)	58 (100.0)	<0.001
Pharmacists	14 (63.6)	8 (36.4)	22 (100.0)	
Did you use EML during your Internship?				
Doctors	22 (14.2)	131 (84.5)	153 (100.0)	
Nurses	0 (0.0)	57 (100.0)	57 (100.0)	<0.001
Pharmacists	10 (45.5)	10 (45.5)	20 (100.0)	

Discussion

The original concept that a restricted list of well selected medicines is able to satisfy the health needs of a majority of a population remains as valid today as was received over forty years ago. The Essential medicines programme is tailored toward improving public acceptability with provision of quality and cost-effective medicines.¹⁰ The Essential Medicines concept still remains the corner stone in the health care system ensuring efficient supply and management of medicines. Tertiary health care professionals have a critical role to play in enabling the success of this programme. This study has evaluated the knowledge, attitude and practice about the EML among health care professionals in a tertiary hospital. The demographics in this study shows a blend of young and experienced health care professionals. Age and working experience, in addition to other factors such as education level and specialty as expected might have influenced awareness of the EML document.¹¹

The high level of awareness in this study corroborated the few available earlier studies within the country.^{9,12} This may be largely attributed to their undergraduate training, since 75.2% of the respondents were taught at this level. However, this did not translate to their knowledge of the history and concept of the EML. There was generally a poor knowledge of this document among the respondents except for the pharmacists. The roles of pharmacists within the hospital may have contributed to their familiarization with the document. Hospital pharmacists are in charge of dispensing and providing guidance to patients in the use of medicines. They are also directly involved in the selection, procurement and distribution of medicines.¹³ Health professionals especially doctors ought to have been exposed to the teaching of essential medicines concept during their undergraduate training. Their poor knowledge of the EML may be as a result of poor retention after graduation. Again some attended institutions where Clinical Pharmacology and Therapeutics have not been properly integrated in the

curriculum. This is discouraging since doctors are the first line in the use of EML among prescribers. Classroom teaching of essential medicines concept has to be reinforced with periodic training by the stakeholders through the Drug and Therapeutic Committee (DTC). Also, the lack of knowledge shows that the concept may not have been fully embraced among health professionals. Poor funding, inefficient delivery and aggressive promotion mechanisms are factors that contribute to the poor dissemination of the EML.

This study also showed a low level of utilization of the EML, especially among the doctors and nurses. Appropriate use of this document not only affords rational medicines practice but also encourages prescribing with generic names. A study by Dakhale et al¹⁴ in India, evaluating the Rational Use of drugs among Interns and Resident doctors in a Tertiary Care Teaching hospital found that 83.5% of the respondents prescribed essential medicines frequently despite not having an EML at their workplace. However only 4% of the respondents knew the exact number of drugs in their EML and only 33.3% prescribed medicines by generics. Hassan et al⁹ attributed the level of generic prescribing (80%) among medical doctors to their high level of awareness (51.4%) and access to the EML. Two earlier studies conducted in this facility^{15,16} found that the Monthly Index of Medical Specialities (MIMS) as the most utilized source of drug information among Resident doctors, followed by the British National Formulary (BNF). This was largely attributed to easy access to these documents. Adequate dissemination of the EML outside the confines of the ministries, may enhance its utilization by health care professionals. Other factors which may ensure optimum utilization include the availability of the standard treatment guideline (STG), level of expenditure on essential medicines, and procurement practices.¹⁷

In conclusion, this study found that the high level of awareness of the EML document did not translate to knowledge and utilization among Health professionals. There is need to optimize the distribution of this important therapeutic tool by the stakeholders. Also there is need for regular training of the health professionals by the Drug and Therapeutic Committee (DTC) on the importance of the EML to promote rational prescribing. Lastly the development of Institutional EML will further enhance the provision of affordable and equitable access to high quality, safe and efficacious medicines.

References

1. WHO Medicines Strategy. Revised procedure for updating WHO's model List of Essential drugs, EB109/8. World Health Organization. 2001. Available from: http://www.who.int/selection_medicines/committees/subcommittee/2/eeb1098%5B1%5D.pdf. Accessed July 11, 2019
2. The selection of essential drugs: report of a WHO expert committee. World Health Organ Tech Rep Ser. 1997; (615):1-36.
3. Reich MR. Essential drugs: Economics and politics of international health. Health policy and planning. 1987; 8: 39-57.
4. Greene JA. Making medicines essentials: The emergent centrality of pharmaceuticals in global health. Biosocieties. 2011; 6: 10-33.
5. WHO. The selection and Use of Essential Medicines. Report of a WHO expert committee, WHO Technical Report Series, 946,2007,p81. Geneva, Switzerland.
6. WHO. Bulletin of the world health organization 2002,80 (11). Geneva, Switzerland.
7. Federal Ministry of Health, Nigeria. National Drug Formulary and Essential Drugs List Act. Decree 43 of 1989. 1st ed. 1989. Abuja, Nigeria.
8. Federal Ministry of Health (FMOH). Essential Medicines List (6th Edition 2016). Abuja, Nigeria.
9. Hassan A, Abduhalli GA, Ahmed AA, et al. Assessing prescribers awareness of essential medicines list, Hospital drug formulary and Utilization of Standard Treatment Guidelines in a tertiary healthcare facility in North-Central Nigeria. Alex J Med. 2017;03: 006-009.
10. Guan X, Liang H, Xue Y, Shi L. An analysis of China's National Essential Medicines policy. J public Health Policy. 2011; 32(3): 305-9.
11. Song R, Ma J, Gao Y. Investigation and Analysis of Medical staff to Natal Medicine system in Guangzhou. China Pharmacy. 2014; 25(8): 688-690.
12. Adikwu MU, Osundu BO. Four years of essential drugs list in Nigeria. Soc Sci Med. 1991; 33(9): 1005-1010.
13. Penm J, Moles R, Wang H, Li Y, Chaa B. Factors affecting the implementation of clinical pharmacy services in china. Qual Health Res. 2014;24(3): 345-56.
14. Dakhale G, Pimpalkhute S, Bajait C, Raghute L. Evaluation of Knowledge, Attitude and Practice of Rational use of Medicine Among Interns and Residents Doctors in a Tertiary Care Teaching Hosital. J Young Pharm. 2016; 8(2): 114-117.
15. Isah AO, Isah EC. Drug information sources utilized by junior hospital doctors in Nigeria. Natl Postgrad Med J. 1998; 5(1): 23-27.
16. Olowofela A, Ayinbuomwan SA, Isah AO. Sources of information on the use of medicines utilised by resident doctors in a Tertiary Health Care Facility in Nigeria. Highland Med Res J. 2017; 17(2): 81-85.
17. Bandameedi R, Mohammed S, Soma H. A case study on National list of Essential Medicines (NLEM) in India and WHO EML 2015- overview. Pharmaceut Reg Affairs.