A PHARMACIST'S GUIDE TO EVIDENCE-BASED PRACTICE: A PATH TO IMPROVED PROFESSIONALISM

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ABSTRACT

The incorporation of Evidence-Based Practice in all areas of pharmacy practice is no longer new in developed countries but less so for most developing countries including Nigeria. The need for continuously improved efficiency is the basic necessity for this concept. Therefore, every decision, action and even recommendation is to be based on best current research evidence. Embracing it and being actively involved becomes very paramount for any progressive pharmacist.

This review article seeks to discuss how Pharmacists can be guided in this emerging frame-work of evidence-based practice. What the concept implies and its status around the world is highlighted.

Evidence on which decisions can be based has been categorized into different types and varying strengths. This depends on the rigorous nature of the procedure used in generating the evidence. Also the need for evidence to be evaluated as regards authenticity and applicability is discussed.

Some of its applications such as in treatment guidelines formulation, formulary drug selection, pharmaceutical care, pharmacoeconomnics, health policy etc. are equally discussed.

In conclusion the need for its incorporation in future mandatory continuing education for Pharmacists is emphasized as well as the increasing necessity for Pharmacists to generate their own evidence through research activities in order to promote evidence-based pharmacy practice.

Key words: Evidence-Based Practice, Pharmacy Practice, Pharmacy Education

INTRODUCTION

The application of evidence-based practice is increasingly being advocated. It is rapidly becoming incorporated into all areas of practice especially in developed world. This is not so for most developing countries like Nigeria. Pharmacy profession is not an exception to this development worldwide. Choosing the right treatment option for a patient by any health professional is often difficult, in theory, the implementation of evidence based practice (EBP) ought to make such decisions more rational. However, to what extent are Nigerian Pharmacists' enlightened, aware and involved? In this article what the pharmacist should and could be doing to cultivate the habit of EBP and how to acquire the skills and educational support needed to do so are described.

In spite of the pressure to provide evidence based health care services, many clinical decisions are still based on anecdote, tradition, habit, opinion of role models, financial incentives and visits from pharmaceutical representatives. Social influences such as personality of the representatives and other individuals who gave information to prescribers were also important. Many practitioners are also fond of the trial and error approach more than often necessary.

Evidence based strategies were likely to be adopted, if they accorded with prescribers personal beliefs and previous practices and if they were affordable, practical, "locally owned" and readily implementable from administrative point of view.

Therefore, understanding the concept of EBP and becoming integrated appropriately is of paramount importance for pharmacists in order for them to maximize their input into health care delivery systems which in turn would facilitate better treatment outcomes.

What is Evidence-Based Practice?

It involves finding and interpreting the best evidence available to answer a specific clinical question and implementing the findings. It stemmed from Evidence Based Medicine (EBM) described by Sackett et al[1] as: "The conscientious, explicit and judicious use of current best evidence in making decisions about the care of an individual patient." It is also described as the science around evidence that is developing, fuelled by research into the underlying methodologies involved in evaluating research.[2]

Evolution and Current Status

Evolution of EBP was in response to challenges of the necessity for evidence-based health care i.e care with evidence of effectiveness that is equally affordable. The fact that professional practice has lagged behind available research evidence cannot be denied.[3]

Research also indicates that a high proportion of intervention, for example in General Practice, could be strongly evidence based.[4]

EBP is expectedly enjoying a high profile with many governments in developed countries such as United Kingdom, US, Canada etc but less so for developing countries like Nigeria.

Giving that no society can fund all new health developments, EBP helps to highlight those that have shown to be worthwhile and discourage those which are ineffective or harmful. The practice also stimulates research agenda, highlighting areas in which research is inadequate. It is important to establish what we know and what we need to find out.[2]

Many groups have been set up worldwide to carry out fundamental research in EBP and to implement the findings.[5,6,7]

An intensive search on the internet for such groups would be of tremendous benefit.

Examples of such groups include the following;

1. Health Technology Assessment in the UK
2. NHS Centre for Reviews and Dissemination (CRD)
3. Center For Evidence-Based Medicine in Oxford
4. The Cochrane Collaboration

developments to emerge from the NHS reforms of the 1990s (in the UK).[22]

Evidence based purchasing and the necessity to purchase protocols of effective care has been described as the "central health policy".[22] The proper application of evidence based methods is particularly critical where health services are limited by resources (e. g with the use of expensive, innovative drugs) or where there is significant variations in clinical outcome. The concepts of evidence-based practice are increasingly important at all stages of health care, including planning, purchasing, delivery and auditing of services. It is therefore, essential that pharmacists, in all sectors of practice, engage fully with this emerging framework of evidence-based health care.

Basic Foundations:

The strong science base in pharmacy is a good foundation for the skills needed in EBP. Moreover, pharmacists working in the information services have for years used critical appraisal skills in their work with drug and therapeutics committee, in formulary development and in writing drug bulletins.[23] However, the wider and growing application of EBP and clinical effectiveness concepts as tools of health policy is relatively recent.

Origin of Treatment Guidelines

The essential feature of treatment guidelines is that they are systematically developed statements which assist health professionals and patients in making decisions about appropriate treatment for specific conditions[24] As a rule, guidelines will reflect the elements of national recommendations but has to be adapted to suit the locality in question based on its peculiarity.[18]

Sources of Guidelines

The following are some of the possible sources of treatment guidelines[23].

* Government (e.g. Health Services Guidance Series)
* Government advisory committees (e.g. Committee on Safety of Medicines)
* Professional bodies (e.g. Pharmaceutical Society, Medical Association)
* National Expert Groups (e.g. British Thoracic Society)
* "Ad hoc" regional or local groups
* Individual General Practitioners or Clinical units in hospital.

How many committees/institutions in Nigeria are empowered professionally, politically, intellectually and financially to set up evidence-based treatment guidelines?

How many professional bodies in countries like ours; e.g (PSN) supports EBP? Of course, the answer could be yes; but in what form is this support taking, and to what extent?

Appreciating Evidence Based Treatment Guidelines

The world has become a global village, and whether treatment guidelines exists or not in our practice settings/the country, it is still a must to be professionally well equipped, particularly in appreciating it and getting involved in one way or the other.

What should pharmacists appreciate? Pharmacists essentially need to appreciate fully the origin and status of treatment guidelines that they are working with and the degree to which it is evidence based. Also, they ought to know that guidelines are used critically and intelligently. If none exists, they should be aspiring to collaborate with relevant stakeholders to produce one.

Guidelines do not remove the need for professional judgment and it is also important to appreciate that many guidelines are not truly evidence-based. They often represent a considered expert consensus in areas where the underlying evidence base is inadequate.[23]

The role of the industries in Guidelines development and dissemination as well need to be examined critically. While they have valid role in providing evidence about the effectiveness of their products to Guidelines authors, bias may be introduced particularly local Guidelines that may lack the rigor and critical scrutiny of national guidelines.[23]

Application of Treatment Guidelines

Treatment guidelines may be used at any level of practice setting. The following are examples,[23]

* Managing the introduction of new drugs
* Rationalizing and optimizing use of existing drugs
* Prescribing decision support
* Providing packages of care (e. g for chronic illness such as diabetes)
* Optimizing use of complex and/or expensive treatment
* Underpinning service developments (e. g extended pharmacy services)

How can Pharmacists be involved in Treatment Guidelines Process?

Pharmacists may be involved at various stages of guidelines development and implementation such as:

* Developing Treatment Guidelines
* Dissemination and implementation
* Monitoring concordance
* Evaluating clinical impact
* Revising and modifying guidelines
* Feed back and communications with patients and clinicians

Professional and Legal Aspects

Guidelines do not remove the need for professional judgment and are not meant to be followed uncritically and slavishly. They mainly function to assist practitioners in the delivery of appropriate care not to mandate or conversely to outlaw particular treatments.[24] Interpretation has to be in the light of clinical context and the needs and wishes of individual patients. Increasing professional requirements of the Pharmacist is mandatory and keeping up to date with relevant evidence-based guidelines is of utmost importance for judicious approach to treatment issues.

Learning About EBP in Continuing Education (CE)

In practice the use of EBP means basing your decisions, recommendations and advice, wherever possible, on the findings of research.

It is necessary to emphasize how Pharmacists can learn about evidence-based practice and how it can be embraced within current continuing education.

The flow of education from the purchaser to the patient is as shown in fig I

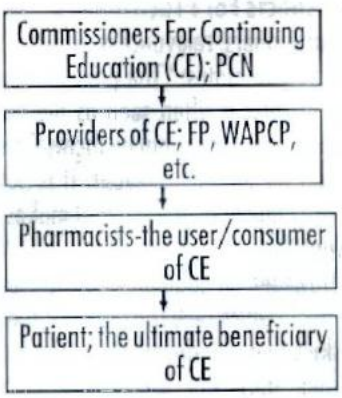

Figure I The flow of education from the purchaser to the patients; FP-Faculties of Pharmacy, PCN-Pharmacists Council of Nigeria, WAPCP-West African Post-Graduate College of Pharmacists. Adapted from Blenkinsopp and Black (1997)[25]

Key Aspects For Providers of Continuing Education

The following aspects need to be considered by the providers of CE,[25]

* Identification of training needs
* Programme contents should be based on the best available current evidence of the topic under discussion
* Methods of delivery should be of proven efficacy. In general the more interactive the delivery method and the more it is focused on the practice of the individual practitioner, the more it is likely to be applied in practice.
* Evaluation of outcome; the providers need to pay close attention to the effect of each educational programme on the practice of participants. However there are many difficulties associated with carrying out such evaluations.
* Evidence of participation, a record showing that a participant has turned up for the course is insufficient unless the course has added value to him/her.

To what extent is our mandatory continuing education in conformity with such recommendations as outlined about?

As seasoned Nigerian Pharmacists, who in one way or the other were involved in the CE programme (trainees or trainers alike), we could know the much needed improvements in future CE programme package of our noble profession in a beloved country that need to be 'cried for' as regards professionalism.

Key Aspects For Practitioners

For practitioners, relevance is critical. Harden and Laid Law states: "The presentation of a series of facts is often seen as the basis of continuing education, but by themselves they may not be seen as relevant. It is how the facts are applied to practice that makes them relevant."[26]

However, in addition to being aware of the ways in which they can use the knowledge and skills they are developing, they must be satisfied that the original information underpinning the educational materials is valid.

Thus individual pharmacists undertaking continuing education must not only ensure that the content is accurate but also that it reflects the latest research findings i.e it is evidence based.

In the current Nigerian Continuing Education Programme, how many trainers are conversant with EBP in the context of the article? To what extent are the contents of the CE based on best current research findings? How relevant are the "facts" learnt to practitioners? Were the modalities for adequate incorporation of the CE into respective areas of practice well spelt out? To sum it all, to what extent has it added value to our practice?

On the part of the learners, are they really enthusiastic to learn or compelled because of the implications of defaulting on annual license to practice? How adequately informed are they as regards current development in their areas of practice, which needs to be improved upon at CE programme? Are they aware of the expectations from the trainers to ensure objective assessment of the contents? Can they differentiate between "facts" that are evidence based and those that are not? Has majority ever heard of the jargon; EBP. More importantly how much of what they learnt can be incorporated, intended to be incorporated or has already been incorporated into practice?

What of the enabling environments for current developments to thrive in our various settings? To give a clearer picture, for example, "Pharmaceutical care" is a new concept, do we have an enabling environment to implement it? Is there any realistic move being made as regards this? How knowledgeable are we to implement it? Does the current curriculum provide needed training and required skills? What are we doing about this as well? How practically professionally competent are we for its implementation? What of our attitude and behaviour towards it? Is it encouraging or not?

We need to answer all these questions and many more, if we are to remain players in pharmacy profession. For now in the country, a few numbers are players, a few are balls being played around by the profession and a great deal number are more or less spectators at least as regards current developments and its probable implementation. The categorization simply put was based on perceived orientation, level of expected comfort of a professional and reality on ground among Nigerian Pharmacists. This of course demands a thoughtful reflection not only on our internal mentality but also on our external reality.

We should be well prepared to face current challenges. Our professional destiny lies in it.

Individual pharmacists undertaking continuing education must not only ensure that the content is accurate but also that it reflects the latest research findings i.e it is evidence-based. Skills must be developed to interpret the necessary information. All Nigerian Pharmacists among others should develop a sense of research awareness in order to allow them evaluate and implement research findings.

Pharmacists are being increasingly encouraged to generate their own evidence through post-graduate research and self-learning in addition to those of traditional researchers within the communities.[25]

Individual Pharmacists should seek out continuing education providers whose programme are evidence based and which are regularly updated.

Incorporation of research evidence into practice is as shown in figure II.

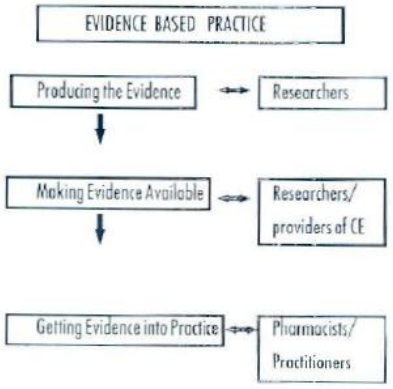

Figure II : Evidence Based Practice : The stages necessary to incorporate evidence into practice and the personnel involved.[25]

The Profession

As the evidence base develops, and as we gradually embrace and appreciate it, Pharmacist activities will increasingly be guided by the results of research. Thus,

practices shown to benefit patient outcomes will be promoted and ineffective practices replaced.

Opportunities

The opportunities for pharmacists in EBP are reinforced by the knowledge that it is almost impossible for practicing clinicians to keep up to date with the medical literature. It has been estimated that a general physician would need to read 19 articles per day, 365 days a year to keep up to date, but in fact devote less than an hour a week to journal reading.[27] Thus if handled diplomatically, most clinician will welcome input from pharmacists where it assists the implementation of EBP; Of course, pharmacists are not exempt from failing to keep up to date or from failing to act on available evidence and this must be addressed if we are to meet these opportunities.

Limitations of Evidence-Based Practice

Despite the many positive attributes of EBP, it is not without limitations;[28]

* Application of evidence from population studies does not always account for individual patient's factors.
* Evidence from trial settings may not reflect outcomes in "real settings"
* Many questions in health care interventions do not currently have answers and for logistical, ethical or commercial reasons these may never become available.
* Lack of local ownership and applicability for external evidence-based recommendations.
* EBP is focused on clinical effectiveness but this cannot be viewed in isolation from cost effectiveness.

Combining Approaches

One method of addressing EBP limitation is to combine the best of the evidence-base and consensus approaches to decision making, whereby relevant health care professionals collaborate to review evidence for particular interventions and agree on recommendations in an attempt to overcome any limitations.[28] This method can be applied to the development of clinical guidelines, evaluating drug therapies, and to the advice given by pharmacists to patients and health care professionals.

Other Specific Applications of Evidence-Based Practice

In addition to Treatment Guidelines formulation, the following are some of specific applications of EBP;

Formulary Drug Selection

Selection of drugs in most cases closely resembles wishful thinking rather than reality. This may be justifiable for new entries but less so for addition to a class (new entity refers to an entirely newly characterized chemical compound while a class refers to an already known group). Comparative data are usually lacking. Effectiveness and safety data are also scarce. Proper implementation of EBP would ensure more rational evidence-based selection. Generic inclusion /substitution can easily be standardized with EBP. Quality generics could be arrived at by, for example bioavailability studies of some/all available brands (research on bio-equivalence) and those that conform with specified standard selected, based on cost minimization analysis (another research for evidence of cost-containment).[29]

Clinical Governance

"Clinical Governance is the system through which NHS organizations in the UK and those that provide services to the NHS are to be held accountable for continuously improving the quality of their services and safeguarding high standard of care by creating an environment in which excellence will flourish."; a means of keeping the quality circle moving.[30]

Main components of a system of clinical governance as it applies in an NHS trust is outlined below;

* Clear lines of accountability for overall quality of care
* A comprehensive programme of quality improvement activities
* Clear policies aimed at managing risks and
* Procedures for all professional groups aimed at identifying and remedying poor performance.

Similar systems can be adapted and suitably modified in various countries and institutions alike.

Undoubtedly, EBP, if in place would make such a task a lot easier, more feasible and more realistic.

Pharmaceutical Care

Pharmaceutical care has been defined as the responsible provision of pharmaceutical services to improve the quality of life of patient.[31] It was described as a practice in which the practitioner takes responsibility for a patient's drug-related needs and holds him or herself accountable for meeting those needs. Using Linda Strand & Hepler et al[31] of University of Minnesota model, there are a number of elements in pharmaceutical care:

* The pharmacist should review with the patient all active medications;
* Link each to an indication;
* Assess actual and potential drug therapy problems;
* Established a care plan with the patient to achieve desired therapeutic goals;
* Follow up with the patient to evaluate outcomes;
* Document all these elements.

He /she should also find a payer, either the patient or a third party, or an insurance company.

Without the use of evidence-based treatment guidelines and evidence-based cost effectiveness data, such a task as pharmaceutical care may never be implemented efficiently.

In a report by a consultative group of experts set up by WHO in 1997 on the Role of Pharmacists in the Health Care System, a recommendation was made as regards pharmaceutical care. It reads: "The consultancy was comfortable in envisioning a universal future for the profession which placed greater value on pharmacy's clinical function. As faculties worldwide consider future curriculum revision and innovation, special attention should be placed on the knowledge, skills, attitudes and behaviours which support a pharmaceutical care model."[33]. The most important way of supporting clinical roles is to generate and provide research evidence that can add value to the current level of practice. In addition, an enabling environment must be created.

Health Policy Making

Proper applications of evidence-based methods, is particularly critical where health care services are limited by resources. This is so for most developing countries like Nigeria. In fact the evidence-based purchasing and necessity to purchase

protocols of effective care has been described as the "Central Health Policy"[22]. EBP at all levels should be an integral part of any progressive National Health Policy and that of our beloved country should not be an exception.

As a tool in Pharmacoeconomics

Pharmacoeconomics is a branch of health economics which involves the use of economic principles and techniques of analysis to ensure that scarce health care resources are used more efficiently.[33]

It has been defined as "the description and analysis of the costs of drug therapy to health care systems and society"[34]

Pharmacoeconomics is the economic evaluation of drug therapy, pharmacy programme or pharmacy technology.[35] With the lingering problems of poor economic growth, decreased funding of health in real terms, increasing health expenditure not only due to population growth but also due to more sophisticated therapeutic modalities, EBP needs to be implemented. Treatment Guidelines and Formulary Drug Selection which are truly evidence-based provide reliable comparators in pharmacoeconomic evaluations. This in turn leads to overall cost-effective therapy.

Improvement in Self Medications /Community Pharmacy Practice

With the development of evidence-based treatment guidelines not only for hospitals, but also for ailments in the community for community pharmacists among other primary health care providers, if followed, improvement and standard care is assured. Practitioners become well informed and subsequently the patients. On the overall, rational use of drug is facilitated, treatment failure reduced and unnecessary expenses curtailed. Such guidelines for minor ailments could be developed at national level and be adapted locally to suit the locality in question as well as the practice settings. If such treatment guidelines are developed by pharmacists, it serve as a back - up for us, particularly when educating other health care professionals and patients.

The Role of Computer Literacy and Information Technology

The role of computer literacy and information technology can not be over emphasized. The need to be conversant with these is of absolute necessity for efficient and effective health care provision.[36] There cannot be efficient storage and retrieval of refined research evidence without use of computer and application of information technology appliances such as the internet.

A lot of 'ready-made' evidence are available on the world wide web that can be applied.

However, as expected available information on the web are of variable quality and some are indeed of questionable quality. This is partly why local generation of evidence is of paramount importance.

Direct Applications in Various Practice Settings

Academic Pharmacists; There is need to be well equipped professionally. Research of proven quality to generate evidence is mandatory. Teaching materials should be based on current best available evidence. The concept of EBP should be introduced to students among others. This can go together with the courses on literature evaluations. Facilities should be up-graded if meaningful research is to be carried out. Current editions of relevant journals need to be provided on regular basis.

Hospital/Clinical Pharmacists; They should willingly embrace the concept and be enthusiastic to get involved fully. Prosecution of evidence-based treatment guidelines and evidence-based formulary drug selection in their settings is indispensable. This must be collaboratively carried out with other health professionals to facilitate acceptability and local ownership. It should be diplomatically introduced, purposefully and maturely monitored and gradually rigorously evaluated and regularly improved upon.

Community Pharmacists; They need to appreciate EBP. All practices ranging from advice to general medical practitioners, treatments of minor ailments, and advice giving to patients should be evidence-based.

Pharmacy Managers/ Administrators/ Policy Makers

They too should appreciate the concept. They need to be knowledgeable to ensure a fruitful inclusion of EBP in health policy at all levels. Motivation of pharmacists in the various ways is important for professional development. They should monitor the inclusion, implementation and regular updating of research evidence.

Providing support for research for evidence is another way. In addition they should fashion out modalities with the authority that be on incorporation of those applications earlier mentioned in the present frame- work of health care delivery system in Nigeria.

Industrial Pharmacists; They should appreciate EBP very well. In their research and piloting, they should strive to have something more superior to the current best available evidence to ensure a breakthrough. Information from their desk should not be biased as they are one of the primary sources of drug information. Adequate in-process quality control of their products is important; the processes too should be regularly reviewed to meet current development.

Diagnostic Facilities; To ensure that practices are evidence based in the hospital, accurate diagnosis is the master key. Most laboratory facilities/equipment are obsolete, their precision, accuracy, specificity and sensitivity leaves much to be desired. In addition to diagnosis, diagnostic facilities are also the bed- rock of monitoring. Our laboratories need to be well equipped with facilities that are currently one of the best in other words product of current best evidence of correctness and sensitivity.

Conclusion

Evidence-Based Practice is a significant development that will take health care to greater heights, its progression aided by the explosion in computer and information technology.

Pharmacists must be prepared to embrace and implement EBP if they are to take a full and informed role in patient care. This will definitely allow pharmacists to control their professional destiny more effectively.

As a matter of urgency, let Nigerian Pharmacists fly towards evidence based professionalism, if we can't fly, lets run towards it, if it is too much for some people to run lets walk, if that is not achievable by others, they should endeavour to craw but each and every one of us must be sure not to be stagnant.

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