

## Concept and Practice of Evidence-based psychiatry and its Application in Nigerian Psychiatry: A Critical Review.

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### ABSTRACT

**Background:** The practice of Evidence-Based Psychiatry started in the 1990's, however prior to this time the practice of psychiatry did have an evidenced base though not structured and systematically spelt out.

This study aimed to review the development of the concept and practice of Evidence-Based Psychiatry and to identify position of Nigerian psychiatry in it.

**Methods:** Narrative reviews were made from information obtained from scientific publications i.e. (books and journals) and internet-based electronic articles.

**Results:** Evidence-Based Psychiatry emerged from Evidence-Based Medicine in the 1990's and aims to base practice on the best available evidence. The evidence is graded into A, B, and C, depending on the study design. Also critical to the practice of Evidence-Based Psychiatry is the availability of high-grade evidence and an efficient means of storing and retrieving it. Evidence-Based Psychiatry uses a systematic approach and involves five steps. Its scope covers aetiology, diagnosis, intervention, and prognosis.

**Conclusion:** A comprehensive definition of Evidence-Based Psychiatry is given. There is a suggestion to change the term 'Evidence-Based' to 'Systematic Evidence-Based'. The right way to determine if a therapeutic intervention is evidence-based is to consider if the process that led to it is systematic in terms of the five steps of Evidence-Based Psychiatry.

Nigeria is yet to develop structures required for Systematic Evidence-Based Psychiatry

**KEYWORDS:** Evidence-based; Psychiatry; Nigeria.

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### INTRODUCTION

Evidence-Based Psychiatry (EBP) sprang up from Evidence-Based Medicine (EBM) in the 1990's<sup>1</sup>. But psychiatry practice predated the concept. Does that mean psychiatry practice was not based on evidence prior to 1990's? In 1934, Von Meduna L.J. Started the use of induced convulsion for treatment of schizophrenia. The evidence he had for implementing such a therapy was his observation that epilepsy and schizophrenia were mutually exclusive<sup>2,3</sup>. The "evidence" was later

found to be wrong<sup>4</sup>, and one would logically expect the practice to stop. But the practice continues till date and is comfortably accommodated by Evidence-Based Psychiatry<sup>5</sup>. There appears to be a contradiction here. Understandably, therefore, there have been criticisms against Evidence-Based Medicine as being "old hat" or even "dangerous"<sup>6,7</sup>.

The objectives of this study are to highlight the history of EBP, to review its current concept and practice, and to identify the position of Nigeria in scheme of EBP.

### MATERIALS AND METHODS

Relevant literature from scientific publications in psychiatry i.e. (books and journals) and electronic literature were reviewed. Literature was obtained from the Neuropsychiatric Hospital library, Aro, Nigeria. The electronic literature was obtained from Internet, via google search engine, using the following search words: evidence-based, medicine, psychiatry, mental health, cochrane, and Nigeria.

### RESULTS

#### History

Evidence-Based Psychiatry (EBP) is an offshoot of Evidence-Based Medicine (EBM)<sup>1</sup>. The latter is defined by Gelder *et al* as a systematic way of obtaining clinically important information about aetiology, diagnosis, prognosis, and treatment<sup>8</sup>. Sackett *et al* pointed out that the philosophy of EBM originated in Paris in mid-19<sup>th</sup> century<sup>6</sup>. However, it was Archie Cochrane who initiated its practice in 1979 when he issued a call to assemble "a critical summary, adapted periodically, of all relevant randomized controlled trials"<sup>9</sup>. The heed to the call in conjunction with advances in computer technology gave birth to databases without which the concept of EBM would be impracticable<sup>9,10</sup>. The establishment of the first Cochrane Center and strong advocacy for EBM in early 1990's fortified the existence of EBM<sup>1,9,10</sup>. There are some other factors that led to the birth of EBM. These included

1. Introduction of Randomized Double Blind Controlled Trial research design into clinical Medicine in late 1940's<sup>7,10</sup>;

2. The realization in mid 1980's that it was unwise to interpret the results of any single study in isolation, that critical summaries were needed to put the results into context<sup>9</sup>;
3. And development and refinement of methods of meta-analysis<sup>10</sup>. In 1995, Goldner E.M et al gave a critical review of the paradigm of EBM and demonstrated how it could be applied in psychiatry to foster the emergence of EBP<sup>1</sup>.

**Table I. Grading of evidence for the therapeutic intervention**

Grade and Level of evidence	Description/ type of study producing the evidence.
Grade A Level Ia Level Ib	Requires at least one randomized controlled trial as part of a body of literature of overall good quality. Meta-analysis of randomized controlled trials. At least one randomized controlled trials.
Grade B Level IIa Level IIb Level III	Well-conducted clinical study but no randomized clinical trials in the area of recommendation. At least one well-designed controlled study without randomization. At least one other type of well designed quasi-experimental study. Well designed non-experimental descriptive studies, such as comparative, correlation or case studies.
Grade C Level IV	Evidence obtained from expert committee reports or opinions, and/or clinical experience of respected authority. Indicates absence of directly applicable clinical studies of good quality.

**Table II. Rating of evidence from epidemiology and preventive research in mental health**

Rating of evidence	Description
Type I	Demonstrates effectiveness of public health action. In replicated studies, measures that diminish population exposure to an identified risk factor are followed by a reduction of psychiatric morbidity in the study population, relative to a comparison population.
Type II	Demonstrates differential incidence in population cohort. Psychiatric incidence rates differ consistently between population cohorts, in accordance with known differences in levels of risk exposure.
Type III	Demonstrates association of illness onset with risk exposure. Onset of new cases of psychiatric disorder in a population is consistently found to be associated with preceding exposure to a suspected risk factor.
Type IV	Demonstrates direct association of illness prevalence with level of risk exposure. Exposure to a risk factor is consistently found to be higher among diagnosed psychiatric cases than among matched controls drawn from same population.
Type V	Demonstrates 'ecological' association between illness prevalence and risk indicators. Area rates of psychiatric morbidity are consistently found to vary with levels of risk exposure as shown by relevant administrative indices.

### Concept of EBP

The concept of Evidence-Based Practice did not arise fully formed and still continues to "evolve" and "adapt"<sup>6,7</sup>. The basic principle of EBP, just like that of EBM, is that the best available evidence must support practice<sup>1,6</sup>. A vital issue to clarify, then, to make EBP practicable is what constitutes the best evidence. US department of Health and Human Services simplified the issue by classifying medical evidence for therapeutic decisions into grades A, B, and C and into levels Ia, Ib, IIa, IIb, IIc, III, and IV<sup>10</sup> as listed in table I. The best and the Gold Standard is grade A (level Ia), while the least quality is grade C (level IV). A different grading is used when the evidence is related to epidemiological and preventive researches rather than therapy<sup>7</sup>, as shown in Table II.

From table I, it can be seen that Von Meduna's evidence for introducing induced convulsion for treatment of schizophrenia is of grade C; while the evidence for continuing the convulsive therapy is of grade A, the practice being later supported by a number of randomized controlled trials<sup>5</sup>. It is needful to emphasize the point that what makes a piece of evidence grade A or what makes it grade C is not the correctness or otherwise of the evidence, but the study design that produced the evidence<sup>1,6</sup>. If a piece of evidence originated from a clinician's experience and it is correct, it remains grade C evidence all the same, at least until proven with meta-analysis of randomized controlled trial or other systematic study; if it originated from meta-analysis of randomized controlled trials and later found to be incorrect - as has happened in time past<sup>8</sup> and may happen again it remains grade A all the same, at least until proven wrong with a better conducted systematic study. If it is possible for both grades A and B evidence to be false, why recommend grade A over other grades? The answer is both statistical and practical: statistically, the theoretical probability of grade A evidence being false is lowest, while that of grade C is highest.<sup>6,8,10</sup>; practically, by the principle of EBP, grade A evidence is continually reviewed in the face of emerging new evidence, making it impossible for false grade A evidence to stand the test of time. Cochrane Library, the backbone of EBP ensures that<sup>9</sup>.

It is also needful to point out the fact that the principle of EBP does not make it absolutely mandatory to base a therapeutic intervention on grade A evidence<sup>1,6</sup>. If the only relevant evidence available for a clinician to answer a specific clinical question is grade C, practice cautiously based on this is regarded as Evidence-Based; but if a higher grade of evidence to answer same question is available somewhere else

in the world, that clinician's practice is regarded as not evidence-based, not because he did not mean well, but because, he could not lay his hands on the best available evidence.

### **Critical Issues**

Therefore, critical to the practice of EBP; is an easy and effective system of accessing all available evidence relevant to a specific clinical question. Another critical issue for practice of EBP is availability of quality evidence to answer all clinical questions. Quality of available evidence determines the quality of resultant EBP. One of the aims of Cochrane library, a backbone of EBP, is production of meta-analysis of Randomized Control Trials<sup>9</sup>.

### **Practice of EBP**

EBP, being a systematic approach has five steps to its practice<sup>7,8,10</sup>.

1. Frame answerable question on a clinical scenario. To make search for evidence more likely to be productive, the question should be in **PICO** format<sup>10,11</sup>: the **P**atient's problem, the type of **I**ntervention or clinical issue (e.g. diagnostic, prognostic, or therapeutic) being considered, the **C**omparison intervention (if appropriate), and the clinical **O**utcome(s) of interest.
2. Search for all relevant available evidence. Because of the vast array of available medical evidence, it will be a Herculean task, if not an impossible one, to take this second step without a reliable, easy, and efficient search means. This is why electronic medical information base is indispensable to the practice of EBP. The whole idea of EBP might as well be buried without electronic database<sup>9,10</sup>.
3. Critically appraise the validity and usefulness of the obtained pieces of relevant evidence. The process of the appraisal is systematic and depends on the nature of study being criticized. Generally, there is need to appraise the validity, presentation of result, and clinical utility of the study. But the things to look for in appraising the validity of individual treatment studies are different from what to consider in appraising that of a meta-analysis<sup>8</sup>.
4. Implement the appraised best evidence after integrating it with your (the clinician's) clinical experience and the patient's preferences, biological and social circumstances. Going by this step it is clear that, evidence-based treatment of depression for a patient in England is not necessarily the same as the evidence-based treatment of same condition for a patient in Nigeria.
5. Evaluate and improve performance of all the steps of EBP. This step makes the whole process of EBP

dynamic and less likely to promote or maintain harmful or ineffective treatments.

### **Scope of EBP**

The scope of application of EBP goes beyond treatment interventions. It also covers aetiology, diagnosis, and prognosis<sup>8</sup>. According to Sackett, a leading authority in EBM, "To find out about the accuracy of a diagnostic test, we need to find proper cross sectional studies of patients clinically suspected of harbouring the relevant disorder, not a randomized trial. For a question about prognosis, we need proper follow-up study of patients assembled at a uniform, early point in the clinical course of their disease. And sometimes, the evidence we need will come from basic sciences such as genetic or immunology"<sup>6</sup>.

### **Required Skill for Practice of EBP**

Practice of EBP requires certain skills in addition to clinical acumen. Dexterity with the use of Information Technology in search of quality evidence is obviously of paramount importance<sup>11</sup>. The skill to independently critique report of any study relevant to a clinical situation is another prerequisite. Outside Nigeria, there are frequent workshops on how to practice and teach EBM<sup>6</sup>.

### **How to Judge if a Practice is Evidence Based**

Lawrie *et al*, in an attempt to do justice to the question "How can we deem a treatment to be 'evidence-based'?", opined that this could be done in a number of ways. But the way they chose to approach the issue was to consider, in retrospect, how well the intervention was in line with high grade evidence<sup>10</sup>. It did not matter if the clinician stumbled on the intervention by trial and error or through erroneous believe, like Von Meduna. No emphasis was placed on the systematic process that led to the choice of the intervention. It is like saying it does not matter if you know what you are doing or not, as long as your answer to a yes-no question is correct, you are brilliant.

## **DISCUSSION**

A comprehensive definition of current concept of EBP is a systematic approach to decision about aetiology, diagnosis, intervention, and prognosis, involving structured formulation of relevant question, systematic search for the best grade of available evidence to answer the question, critical appraisal of the obtained evidence, integration of the selected evidence into clinician's expertise and patient's variables before implementation, and continual evaluation of practice in the light of emerging better

evidence.

To eliminate subtle confusion about the concept of EBP, there is need to change the term 'Evidence-Based' to 'Systematic Evidence-Based', since the primary emphasis of the concept is not so much on the *evidence* as much as it is on the *systematic process* that leads to the production of the evidence, its search in wherever it is stored, critique, implementation, and continual evaluation<sup>1,6</sup>.

A better way to determine if a practice is evidence-based, one in line with the spirit of EBP, is to consider if the process that led to the choice of the intervention was systematic in terms of if the practice was pre-dated by a relevant answerable clinical question, of the effectiveness and depth of literature search to answer the question, of quality of appraisal of the obtained evidence, of how well the selected best evidence is integrated with the clinician's experience and patient's variables, and of the quality of evaluation process in place for the practice. With these criteria, it does not matter if, in twenty years time, the practice is found to be beneficial or not. What matters is that there is systematic, strategic machinery to ensure that the practice is justified by available best evidence, and that when it ceases to be so, it will not be practiced perpetually. This really is the ultimate objective of EBP. EBP does not guarantee perfect treatment; it only promises best treatment in the light of currently available best evidence and continual review of practice as better evidence emerges.

Although there is no study yet that examined how 'evidence-based' Nigerian psychiatry is, going by Lawrie et al's chosen criterion for judging how evidence-based an intervention is, the probability that some practice in Nigeria is evidence-based is non-zero. However, considering that Nigeria has no electronic database of local Randomized Control Trials, has no 'national access' to Cochrane Library like countries such as England, Wales, Australia, Finland, Norway etc<sup>12</sup>, has no 'frequent' workshops on how to teach and practice EBP, and is yet to incorporate the concept into undergraduate and postgraduate trainings, it will not be out of place to say that she is yet to develop structures needed for Systematic Evidence-Based Psychiatry.

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