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PROVIDING EVIDENCE FOR MEDICAL AND MENTAL HEALTH PRACTICE THROUGH SYSTEMATIC REVIEWS

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# INTRODUCTION

Because patients, each day, present with a range of unpredictable and untimely conditions, clinicians these days are faced by an ever increasing uncertain- ties. On the other hand clinicians face much more diffi- culty in accepting the uncertainty, especially in the health services. Therefore, they have to acquire the skills to recognize, understand and master the uncertainty sur- rounding them1. This they can do by recognizing their own skills, experience, and knowledge base. The criti- cal appraisal skills, core skills of evidence based medi- cal practice when acquired will help individuals under- stand and deal with the uncertainty in practice2.

Concurrently, the ever increasing interest in tak- ing health-care decision that are based on evidence from a variety of health professional groups has made the topic of Evidence Based Medicine (EBM) a global phenomenon taking place at a variety of speeds in dif- ferent countries3-4. With the idea already widely wel- comed by all, the scope of EBM has become very broad. This can be seen from the increased collaboration be- tween individuals and organizations in their effort to ex- ploit their potential for improved patient’s care6-11. Now we see an increasing number of randomized controlled trials (RCT), systematic reviews (SSRs), increased links between researchers and organizations and number of position statements and development of clinical prac- tice guidelines2,3,5,12-16.

The aims of this paper are; first to explain what is evidence based medical practice and to give a brief overview of the design of a systematic review and high- light their importance in the practice of evidence based medicine. This is in no way exhaustive review of the subject but is basically intended to increase awareness and interest of the reader in the subject.

# EVIDENCE BASED MEDICINE (EBM)

Evidence based medicine is employing a consci- entious, explicit and judicious use of current best evi-

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dence in making decisions about the care of individual patients. It is basically an approach to medical care through integration of systematic assessment of clini- cally relevant scientific evidence relating to the patient’s medical history with the health-care providers clinical expertise and the patients treatment needs10,16-20. It is a subject and philosophy of care that seeks to ensure that all involved in patients-care and even the patients them- selves are equipped with unbiased up-to-date knowl- edge about a clinical decision and the best treatment alternative for a contemporary clinical problem.

## *Sources of Evidence*

The evidence for EBM is searched through elec- tronic retrieval of papers, critical appraisal of original studies, reports and reviews based on research. How- ever, identifying and finding this research is not easy. It can not only be costly and time-consuming but also not easily understood by the busy practitioners. Most of the resources may be beyond the ordinary practitioners in almost all developing countries. For this purpose, they are being helped, by others, making this search easy, fast and affordable to explore evidence for their clinical decisions, through the establishment of special libraries and publication of systematic reviews (SSRs). At all lev- els, there is, also, now a considerable emphasis put on the importance of using robust study designs that ensure conducting good quality primary research trials7,9,10,15,16,21-27.

## *Quality of Evidence*

Broadly, research may be categorized as primary research or it may be a secondary research in the form of literature reviews25. Primary research being new and based on individual studies when of good quality is the best source for finding evidence about a problem2,5,18,24. In the presence of a wealth of high quality research stud- ies addressing some health questions, pertaining to treat- ment, diagnosis, relevant to the management of an indi- vidual case, the potential for evidence will be good. But when there is a patchy coverage of the area in question with little generalizable evidence relating to the problem, the uncertainty has to be acknowledged, rationally man- aged or a good clinical judgment has to be used1,28.A problem is that all areas of health-care services and all questions have never received the attention of primary research with some areas particularly neglected, espe- cially those in developing counties. It is also very time- consuming to design, fund and publish high quality pri-

mary research in clinical disciplines. Even when the evi- dence from good quality trials is available from a coun- try, it could not be applicable to the populace in other countries. Lastly, in many countries including specifically Pakistan, high quality primary research could not be done for problems of funding, infrastructure and recruit- ment, training and retention of clinical academic staff.

## *Problems of Using Published Material For* Evidence

The driving force for searching the evidence is the ongoing tension between what is known and that is yet to be known and what is certain and what is to be ascer- tained. Even if an individual clinician is trained in the skills of critical appraisal of research, he or she usually faces difficulty in practicing these skills due to many rea- sons5,13,14,17,19,24. One may be the problem of prompt and convenient access to relevant research publications in the work place. Another may be the time restraint. It usually requires sifting through huge volume of work available on a problem or question. Even after manag- ing all the above, the more frequent and common expe- rience of much work available falling short of modern standards of objectively structured methodological qual- ity is highly frustrating to many.

Keeping the above in mind, the clinician is required to be able to constructively critique the primary re- search2,6,17,18,20. Only then he or she will be able to inte- grate useful research conducted to the standards of the day. All that is necessary to do this is that the clinician has adopted a constructive and professional mindset in making own assessment of published work. During the appraisal of a research study, primarily one will look for the presence of quality and relevance in relation to the clinical case or question with reference to the character- istics of population studied, study setting or environment, the procedure or intervention assessed and the degree to which the findings of the study should influence an individual clinical practice2,15,17.

# SYSTEMATIC REVIEWS

Evidence based medical practice starts with the critical appraisal of primary research29. The findings of relevant primary research trials are synthesized in Sys- tematic Reviews (SSRs). In systematic reviews, the strength of evidence is established across a number of studies. This is done by a systematic synthesis, using robust and comparable analyses of the findings. Ide- ally, in systematic reviews, a number of randomized con- trolled trials are reviewed6,8,15,17,22. Then a rigorous, com- posite overview of the degree of success of a particular intervention or treatment is made through a meta-analy- sis2,5,8,20,24,25.

Usually, the quality and reliability of systematic reviews is considered good if these are produced by organization like Cochrane Collaboration. The Cochrane Collaboration is an international organization helping

people make informed decisions about health-care by preparing, maintaining and promoting the accessibility of systematic reviews and the effects of health-care in- terventions (For further details please visit www.cochrane.org).

The conduct and interpretation of the findings of systematic reviews may be easy where the evidence is plentiful, and coming from a reasonable number of high quality randomized controlled trials. Interpretation of find- ings of SSRs may become difficult in situations where the evidence is different, limited and when it of very vari- able quality.

## *Quality and limitations of Systematic Reviews*

Systematic reviews are the cornerstones of evi- dence based medical practices. It involves a thorough, unbiased, explicit and systematic process whereby all the evidence to specific well-defined review question is sought and appraised in terms of quality and relevance. The utility and quality of the resultant systematic review is influenced by the review question and literature re- view conducted.

Most clinicians having the experience of reading systematic reviews would have realized the inherently unpredictable nature of SSRs. The outcome of an SSR is certainly dependent on the objective analyses of the only those studies that meet the specific inclusion crite- ria2,6,12,13,16-19,27. On many occasions and to many research- ers and policy makers, recognition of these criteria re- mains unknown before the start of an SR. Another prob- lem is that many studies, despite being oft-cited and popular, unexpectedly fail to pass the pre-set threshold of methodological quality. There are many other prob- lems which affect the quality of a systematic review. These include:

* Use of inadequate search strategies.
* Inadequate inclusion and exclusion criteria.
* Use of inadequate screening and quality as- sessment of papers.
* Pooling of data.
* Subjective bias in interpretation of findings.
* The way of reporting SSRs8,13,15,18,20,25. Guidelines for conducting, reporting and improve-

ment of the quality of SSRs have been laid down by ex-

pert groups and organizations and their consideration have been shown to have beneficial effects10, 17.

## *Foundations of Evidence Based Medical* Practice

There is a need for joint effort from the research- ers, sponsors and health-service organization for a planned dissemination of research findings. An effective and sincere coalition among researchers, industry, care-

providers and professional organizations is a need of the time. With the establishment of close links between researchers, teachers and professional research asso- ciations evidence based practice could be promoted by raising awareness about the use of SSRs in routine clini- cal practice.

Well planned SSRs have the potential to change the practice of helath professional for the benefit of their patients . For example Cochrane reviews that demon- strated that adding artesunate, a new antimalarial drug, to existing drug regimens dramatically reduces the risk of treatment failure29 can help to to save thousands of lives in developing countries.

However, in the presence of now well-documented 90/10 gap in medical research (less than 10% of global funding is allocated for the research that affect over 90% of the world population30, SSRs cannot help to identify the answers to these questions on their own because the randomized trials answering the questions for most of the conditions we face in this part of the world simply do not exist. Increasing the proportion of systematic re- viewers from the developing world can improve this situ- ation which is only possible if we can demonstrate in our practice that the evidence base for the intervention we need in this part of the world is inadequate. SSRs can also help to identify the relevant research questions that need to be answered for effective health care provision in these countries, one of the most important but unfor- tunately commonly ignored steps in conducting research. Properly conducted SSRs should be able to inculcate a spirit of critical approach to the scientific literature, which at present is blind spot in our training and practice.

Specialty organizations such as Pakistan Psychi- atric Society can play a vital role in this. Publication of abstracts of systematic reviews in the Cochrane Corner, a regular feature of JPPS is an example which other jour- nal can follow. It is important to identify gap in our knowl- edge areas and to instill funding in to those. Research funding bodies such as PMRC, Pakistan Science Foun- dation and the Federal and Provincial Health Ministries must consider only the funding of randomized controlled trials (RCTs) and systematic reviews (SSRs) that aim to answer the question which are relevant to our settings. The professional associations also need to be aware of the benefits of the EBM by promoting the high quality research that is directly relevant to practice and care.

There is also a need for establishing a close link between medical education and research to redesign and initiate undergraduate, postgraduate and professional de- velopment programmes so that teaching is done effec- tively and ethically to prepare the doctors who are well equipped with the skills to appraise and apply the evi- dence needed in their practice. They should be able to understand both the basic and applied science, able to manage the uncertainty and understand the importance of knowledge development. The young doctors must be willing to remain updated and willing to change clinical

procedures over their lifetime clinical practice. This, they can easily do when they are taught critical appraisal skills (CAS) which unfortunately is rarely part of the medical curricula in Pakistan at present.

# CONCLUSION

It is need of the hour to focus on conducting good quality research and conducting randomized controlled trials and systematic reviews. This will then establish cred- ible evidence for the practice of medicine.

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