

Identifying the Most Appropriate Methods for Generating Evidence in General Medicine: Biomedical and Biopsychosocial Research

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Editorial

The word research is used to mean an activity of discovery, development, and testing of knowledge. From the perspective of researchers, it is necessary to generate new knowledge that is sufficiently consistent so that its consequences have a fundamental impact on the nature of everyday practice. The goal is to produce knowledge and action directly useful to practice and patients. Research allows for the acquisition of new knowledge and should serve to solve previously unsolved problems [1].

For methodological reasons, researchers find it necessary to define the concept of health. It is at this point that reflection on a biomedical or biopsychosocial (BPS) model is appropriate. However, the way of defining "health" has not been "more BPS" since the development of this model. Researchers continue to use a biomedical concept of health, unrelated to reflection on BPS. Research in medicine remains solely biomedical [2].

On the other hand, current biomedical research often follows the law of diminishing returns. Ever-increasing resources, human effort, and complexity are required to achieve ever-smaller benefits. These are often so minuscule that their detection requires a design as problematic as the combined outcome variables. When the observed benefit in a clinical trial is statistically significant, however small in absolute (not relative) terms, the treatment studied is recommended as an ethical obligation by opinion leaders and representatives of orthodox knowledge. Such a treatment is likely to become a mayor recommendation in clinical practice guidelines because it is assumed to resolve or prevent thousands of events in the general population [3].

Certainly, a series of frequent methodological errors can be detected in published articles, but the crucial problem is another: the social and practical relevance of such research is not considered a basic indicator. The fundamental aspect of research is to discover new knowledge that is sufficiently consistent so that its consequences have a fundamental effect on the nature of everyday practice [4].

Consequently, evidence-based medicine (EBM) should not be limited to biomedical aspects, and certainly not to randomized studies, but must also address continuity of care,

communication skills, training, education, health promotion, beliefs, somatization of feelings, and personality traits.

Currently, quantitative, objective procedures are considered superior to subjective and qualitative ones. However, it is forgotten that the topic chosen for research, and the form of research, are based on the scientist's philosophical assumptions, and theories and methods create the data. Every approach to research is inherently qualitative and subjective. Decisions about the line of research, the definition of the problem, the selection of instruments to use, the choice of data collection methods, and the interpretation of the data are a subjective process determined by the researcher's context.

Researchers inevitably affect-bias-their studies. Practitioners are influenced by these biased studies and by the "political" climate (pressure from the "scientific" community, the pharmaceutical industry, social climate, etc.) in which they work. This closes a cycle of self-perpetuating scientific bias [5].

Conventional quantitative-objective medical research only has methods for measuring separate parts of the whole; however, the study of the body is the study of an individual integrality in relation to its context [6]. Despite a veritable explosion of new knowledge in the field of biomedicine in recent years, research itself-and technology-has become a factor in medicalization and the extreme rise of the pharmaceutical industry. Every health problem is considered an epiphenomenon of chemical processes [2], and part of this biomedical research can be considered a public health problem [1,7].

The central idea of the BPS model is that, for an effective medical approach, neither the disease, nor the patient, can be reduced to pathophysiology. The professionals most "interested" in the BPS model are primary care physicians, since they are the first to receive a complete patient (before being divided into specialties) with an ailment that, in a more or less obvious way, is undoubtedly related to their personal and social circumstances [2]. Thus, biomedical research that typically studies the parts of healthcare and the parts of the individual one by one, but not as a complete system, is unlikely to obtain comprehensive results. The comprehensive system includes the doctor-patient relationship, multiple conventional and non-conventional (alternative medicine) treatments, and the philosophical context of care as part of the intervention. Systemic results produce simultaneous interactive changes within the totality of the person [8]. In addition, psychosocial and contextual factors condition diagnoses, treatments, evolutionary course, prognosis, and medical outcomes [9]. In this scenario, although the primary care (PC) sector is very important and offers significant opportunities for research, and especially for research using a BPS model, the research it has been able to develop remains biomedical, with BPS research in PC non-existent.

It must be remembered that the "research question," if it stems from the real human context, cannot be investigated in isolation from it, and thus its answer requires both quantitative and qualitative methodology, but not applied sequentially but interactively and

iteratively. The same could be said for the search for information and the interpretation of knowledge. EBM only takes into account the mechanistic answers obtained from decontextualized questions. However, on the other hand, the BPS model specifies a distinct conceptual framework for medicine, but offers no guidance for research, nor novel techniques-neither diagnostic nor interventional-derived from its theoretical foundations [2,10]. The relationships between the social, psychosocial, psychological, and somatic aspects of illness remain obscure and complex, despite the constant progress in our knowledge, both biological and psychological [11].

In summary, it must be recognized that there are various forms of evidence, and that initial work is required before the actual research to identify the most appropriate methods for generating evidence, including assessment of safety, acceptability, appropriateness, quality, and effectiveness. Both qualitative and quantitative research are useful sources of evidence. In clinical practice, qualitative research is especially useful for contributing useful and contextualized evidence that allows for understanding information in complex patient situations that do not allow for randomized clinical trials, or where there is no prior systematic knowledge, and it is necessary to understand the phenomenon in context and with the implications of that context (which quantitative research does not consider).

Qualitative research is a viable form of evidence, and it also illustrates how our traditional assumptions about evidence fail to consider the implications of context, meanings, and clinical practice. Research work arises or is initiated from situations observed in daily healthcare practice. We must focus on concrete facts and learn to read and interpret them in their interactions and different dimensions, not simply applying a pre-established theory.

Some technical and pragmatic aspects of the BPS model must be developed to enable the introduction of biopsychosocial data into the medical framework. This requires taking into account qualitative research and observational techniques. In short, resisting the exclusive tendency toward biomedical and drug-centered-"medicalizing"-research could be considered a healthy measure from a Public Health perspective.

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