
Family Practice Forum

Epidemiology and Family Medicine

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In his 1974 Milroy lecture, "The Marriage of Primary Care and Epidemiology," Tudor Hart argued an eloquent case for general practitioners to acquire the skills of epidemiology:¹ the growth of research activity in family medicine has underlined the overlap between the two disciplines.

One welcome trend in recent years has been the movement of the epidemiological focus from the hospital to the community population, and family practice would appear to be the most logical context in which to study the natural history of disease, the identification of syndromes, and the definition of community health needs. In the tradition of McKenzie and Pickles, Hodgkin and Fry have demonstrated the valuable contributions that can be made by simple and inexpensive observation. Furthermore, it is unlikely that any other branch of medicine can provide the information to satisfy the demand for a more holistic appreciation of ill-health.

However, examination of the relationship between epidemiology and family medicine suggests some disquieting but challenging problems:

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1. Epidemiology is a complex and demanding discipline and the most fruitful research requires rigorous thought and technique. Unfortunately, much epidemiological research in family medicine is of a very mediocre standard.

2. The inspiration of such physicians as Pickles and Fry has encouraged many family medicine researchers to embark on similar descriptive research which has, unfortunately, often been pure repetition, or "stamp-collecting," unlikely to advance family medicine's knowledge.

3. By its nature, epidemiological research is frequently analytic and therefore reductionist in its approach. This, of course, does not encourage a systems or holistic perspective. For example, the important causal association between cigarette smoking and lung cancer should not distract from the behavioral and psychological aspects of smoking. A further example is that the tragic association between medication with thalidomide in early pregnancy and fetal damage received more attention than the equally important question of why so many young, healthy women were thought to require a psychotropic drug.²

4. Classically, epidemiology has been an inductive science with significant limitations.

5. Despite the sophistication of its technique and the need for rigor, epidemiologists have a universal tendency to become "method orientated

rather than problem orientated."³ It is often this concentration on method that either inhibits family physicians from research or encourages them to use overcomplex and frequently inappropriate techniques which diminish the importance of their work.

What are the possibilities for not only a viable marriage but a creative one? Epidemiology has much to offer family medicine research and the enthusiasm for a holistic perception of illness should not encourage throwing the baby out with the bath water. Multivariate techniques allow epidemiology to be much less reductionist than it used to be. Furthermore, community-based health and ill-health is a virtually unresearched territory, and classical epidemiological techniques will reward the creative and observant family physician who is not stifled and blinded by the existing taxonomies and nosologies of medical knowledge. One interesting example of a fundamental, yet under-researched area, is the nature of "the family." It may be that an accurate description of the family will be as valuable in detecting family pathology as the pulse rate is in assessing heart function. However, it appears that there is not even a simple classification of families, at least not one that is validated and universally accepted for the measurement of family ill-health.

The increasing influence of Popper has given support to a hypothetico-deductive rather than inductive approach in epidemiological research.³ Simply argued, it states that it is relatively easy to produce a theory to fit any set of observations and then proceed to support the theory with carefully designed replicative studies. Popper argues that advances are much more likely to occur if one uses as the starting point a well-developed hypothesis which one then sets out to refute. DeBono encourages creative, lateral thinking and the use of multiple, divergent hypotheses. This is, of course, the problem solving model which is the basis of the diagnostic process.

There is certainly an excellent case to be made for more rigorous question formation at the outset of research activities. However, the attraction of the Popperian model should not allow us to forget that there remains the need for high quality empirical and exploratory research which can be used to generate hypotheses. This approach is discussed in a recent excellent review of research traditions in family medicine.⁴ The paradox, however, is that

for best results this less structured type of research probably requires a more disciplined and certainly a more agile and observant mind.

However, it is important that epidemiology should not monopolize the whole breadth of family medicine research, which would then be but a branch of clinical epidemiology. There are many aspects of family medicine which defy measurement in epidemiological terms. For these we have to remain content with simple, accurate descriptions or, occasionally, the original aphoristic contribution. Indeed in the last 20 years, advances in family medicine thinking have probably resulted as often from the words of a respected contributor as from a highly significant chi-square test. However, within this uncertain and uncharted area lies the challenge and fascination of family medicine. It may be that new tools will have to be created to measure the content of family medicine in as meaningful and realistic a way as possible. A holistic description of illness is considered to be central to the discipline of family medicine, and yet the vocabulary and taxonomies that would allow freedom from descriptions of illness do not as yet exist. McWhinney has indicated how we might begin to move beyond classical diagnostic labels,⁵ but the family medicine literature does not reveal much progress in this field. Family medicine departments will require individuals who not only understand the techniques and applications of epidemiology but who also know its limitations.

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