

The Varieties of the Epidemiological Experiences and the Contribution of the General Physician

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ABSTRACT

This article aims to reflect and show the importance of the epidemiological experience of general medicine. Family doctor is in a rare position that allows him to develop an epidemiological intelligence for the characterization of actors at the local level, which combines individual, family, and community care, and which uses quantitative and qualitative data. This epidemiological experience of the family doctor, for pedagogical purposes, could be systematized in three levels: (1) Individual or personal basis: The continuity of care that allows the knowledge of the natural history of diseases and the pattern of accumulation of health problems and diseases during life; the method of identifying pre-symptomatic diseases and screening is done by “case-finding,” taking advantage of patient visits; (2) Relational base: The epidemiological method of family medicine is a biopsychosocial method health is a property that emerges from the person understood as a complex life system, and the integral system includes the doctor-patient relationship and the family as an important influence on health, which can be characterized by genogram as an instrument or tool of the biopsychosocial model, and that gives information about the patient, their family and context; and (3) Local community base: The great accessibility of patients to their family doctor, and its role as the first contact with the patient, means from the epidemiological point of view the access to the “numerator,” and the care to defined population with geographic base, means the access to the “denominator;” a as family doctor works in small geographical bases, the knowledge of these health data can show important or news epidemiological characteristics.

Key words : Anticipatory care, community medicine, continuity of patient care, family medicine, general practitioner, health promotion, natural history of disease, physician-patient relations, preventive medicine, uses of epidemiology

In how many ways can one photograph water, and what can such pictures convey? A river has a history written on its banks by generations of people who, in effect, have left us their stories there.”

Inge Morath (1923–2002), Austrian photographer

INTRODUCTION

Like William James, who argues that there are two types of religious experience, on the one hand, the institutional (religious practices and norms of a society), and on the other the personal religion or direct relationship between man and God, which is what it must be mainly considered, since the former only represents its

socialization,^[1] there are also two types of “epidemiological experience:” On the one hand, the institutional or public health dimension (it focuses on the population and studies the frequency of occurrence of the disease and its determinants in a big or mass population), and on the other hand, the individual-local dimension (it focuses on the individual person, and from there it extends to the family group and the community of small geographic base and finally to the population).

This second “epidemiological experience” should be mainly considered, since the massive mobilization of products and people today makes it impossible to analyze global health without knowing the local one. Therefore,

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surveillance and epidemiological intelligence require the characterization of actors at the local level, recognizing the socioeconomic differences in neighborhoods and local geographic areas and generating evidence for the response of specific problems.

In addition, epidemiology is an observational science that is based on the scientific method - the epidemiological method: Starting from a hypothesis formulated a priori, having an adequate design, verifying that there is an association that can not be explained by chance, eliminating or diminishing the effect of other variables related to the exposure and the disease being studied and, finally, to make a critical judgment about the possible existence of a causal relationship.

Thus, for many, “science” is the study of numerical data, so in epidemiology, it is thought that the analysis of a study begins with the data of the biological test and ends with the statistical management of a survey. However, science begins as a systematic qualitative observation. The first philosophers formulated natural theories based on the observation of phenomena; also the first scientists mainly treated the observation of the effects.

In this panorama, the figure of family physician/general practitioner is in a rare position that combines the individual and community dimensions.^[2] The family doctor starts from the careful observation of people in their relationships networks for years. Although epidemiology is the study of the distribution patterns of diseases in human populations, the person is the center of interest for the family doctor; the person is seen in context. Moreover, he does with an adequate assessment of not only “what health problems there are,” but also “how many there are and where are;” the incidence and prevalence in his place of care.^[3] Hence, there is an epidemiological experience typical of the level of family medicine. From this individual level, the family doctor knows that populations are not just collections of individuals, but parts of local communities; and communities are part of society.

DISCUSSION

In developed countries around two-thirds of any population consults in a Family Medicine service at least once a year, and more than 80% contact once every 5 years.^[4-7] Registries in general practice are key sources for morbidity estimates, especially if all people are registered in general practice and if the general practitioner is the gatekeeper of health care, diagnoses from medical specialists, and other health-care providers will also be known by the general practitioner. The collection of data in Family Medicine is cumulative and continuous. The path of all patients begins and ends with the family doctor. For most illnesses, in many health systems, the general practitioner is the first point of contact in the health-care system, and he looked

after a population whose age and sex composition is known. Hence, family medicine is a major source of information on health problems and their variation, and this has important epidemiological connotation. A good starting point for epidemiological research is the critical analysis of individual patients - a man and his small world.^[4,5,8,9]

The family doctor provides “epidemiological intelligence.” Intelligence is the ability to understand, assimilate, elaborate information and uses it to solve problems and seems to be linked to mental functions such as perception and memory. Intelligence is the ability to relate knowledge that we have to solve a certain situation. This type of “intelligence” - epidemiological intelligence - should be added to Howard Gardner’s list of multiple Intelligences.^[10]

Each medicine specialist develops some intelligence more than others. The “epidemiological intelligence” is specific to the family doctor who places greater emphasis on it. It can be said that the “epidemiological intelligence” is the process of detection, screening/filtering, verification, analysis, evaluation, and investigation of the information of those events or situations that may represent a threat to public health. It includes activities related to early warning functions. This process should be understood as a dynamic and interactive process since the successive entry of new information can trigger new activities. The purpose of epidemiological intelligence activities is to produce early and verified information on situations or events relevant to public health and that may require action, including prevention, and control measures, with the objective of taking these actions as quickly as possible with quality information.^[11,12]

The family doctor can observe early disease events, which can verify, hypothesize causes, assess evolution, plan prevention, and control measures, as well as an alert if necessary. The family doctor, in his special position, therefore, has a great “epidemiological intelligence” and achieves a special “epidemiological experience” by personal or direct relationship between man and epidemiology. The family doctor uses quantitative and qualitative information and performs continuous and reiterative analysis of individuals, families, and local communities over time. Hence, individual attention, and community are not alternatives of care given by family doctor. What is traditionally called individual, family and community attention are elements of the same reality and cannot be separated; that is, there is no individual attention, but always is both familiar and community.^[4,7]

However, despite this individual-community unit, the epidemiological experience of the family doctor, for pedagogical purposes, could be systematized in three levels [Table 1].

Individual/personal basis

The continuity of care of the family doctor implies knowledge of the natural history of the disease. Natural history of the

Table 1: The epidemiological experience of the family doctor, for pedagogical purposes, could be systematized in three levels

Levels of epidemiological experience in general medicine	Underlying concepts	Practical examples
1 - Individual/personal basis	Continuity of care and “case-finding”	Natural history of the disease Pattern of accumulation of health problems and diseases during life Actively searching and systematically of risk factors or pre-symptomatic diseases at-risk people
2 - Relational base (relationships among persons as an integral system)	Biopsychosocial model Health is a property that emerges from the person’s understanding as a complex life system	Doctor-patient relationship Multiple conventional and unconventional treatments Family as an important influence on health
3 - Local community base	The great accessibility of patients to their family doctor The role as first contact with the patient Care a defined population with a geographic base	Access to “numerator” and “denominator” Epidemiological characteristics and specific needs in different small places

disease is the course of the disease from the beginning to its resolution. That is, it is the proper way to evolve that has any disease or process, without any medical intervention. Detailed study of the natural history of the disease has been one of the most fruitful in the field of medicine. With the observation and proper description of the natural history of the disease, medical science has been able to understand its course and in this way, detect the disease in an early manner and prevent its sequelae.^[13]

Long-term knowledge and monitoring of individual patients allows the family doctor to know the pattern of accumulation of health problems and diseases during life.^[14] Relationship between individual and population health is relative and dynamic. Their interrelated dynamism derives from a causally defined life course perspective on health determination starting from an individual’s conception through growth, development, and participation in the collective society to death, all seen within the context of an adaptive society.^[15]

Thus, the family doctor can perform qualitative and quantitative longitudinal studies, in persons, families, and populations, which are needed to identify not only the types or patterns of groupings but also especially about the trajectory of the causal chain of accumulation of health problems, in a power-law distribution where there are people, families, and groups with cumulative disadvantage patterns.^[16]

On the other hand, the method of identifying pre-symptomatic diseases and screening, at this level of care, is done differently as “case-finding.” This means taking advantage of patient visits; it involves actively searching and systematically of risk factors or pre-symptomatic diseases at-risk people, rather than waiting for them until they are with symptoms or signs of active disease.^[17-20]

Relational base (relationships among persons as an integral system)

The epidemiological method of family medicine is a biopsychosocial method --- Each person is part of multiple interconnected systems. Health is a property that emerges from the person’s understanding as a complex life system. Thus, the whole can have properties that separate parts do not have. Thus, it is unlikely that biomedical and epidemiological research that typically looks at the parts of the health care and disease individual parts one by one, but not as a complete system, will obtain comprehensive results. The integral system includes the doctor-patient relationship, the multiple conventional and unconventional treatments (of alternative medicine), the contextual treatment or treatment of the matrix of relations of the patient - family, friends, work, hobbies, sports, church, and local community - and the philosophical context of assistance as part of the intervention. The systemic results produce simultaneous interactive changes within the whole person.^[21]

The context in family medicine is a non-linear context, without conditions of normality and independence of variables in a complex system --- Most of the phenomena studied in family medicine - a complex system - cannot be solved by examining the relationship between a few variables. A basic premise of the biopsychosocial model is that of the impact on a subsystem -biological, individual, family, and community - affects the rest, both in health and disease.^[22,23]

There is an important body of knowledge based on well-designed and randomized studies that show that the family has an important influence on health: In asthma, cardiovascular disease, hypertension, obesity, mental health, infections, medical visits, and hospital admissions, etc. When the greater complexity of the problem is addressed, it is also the need to work with the family group.

Here, for the epidemiological study in the family group or system, the characterization, monitoring, and intervention need the use of genograms, among other methods. The genogram is an instrument or tool of the biopsychosocial model that gives information about the patient, their family, and context, and that implies a prognostic value and useful information for the consultation. The biomedical family history means collecting problems of genetic transmission, but from the biopsychosocial point of view it can go much further: The elaboration of the genogram produces a therapeutic link with the family, implying a qualitative change in the relationship; the genogram gives rise hypotheses - in circular terms - about patients' risks for family-related illnesses or stressors, such as diabetes, hypertension, coronary heart disease, substance abuse, and depression; it allows developing a provisional explanation about how the family system is organized around a problem; genogram shows events of family life, transitions, and turning points, that mean opportunistic prevention and treatment moments. The genogram can be used as a screening system in all patients, at their first glance, regardless of the problem that motivates their consultation, to identify biological or psychosocial problems that would manifest themselves later.^[24,25]

In infectious diseases transmitted in the family, such as, for example, keratoconjunctivitis, the use of the genogram allows characterize the family (persons, relationships, and pathways of transmission), monitor the course of the disease and the outbreak (continuous care), and to know all the people at risk or attended to obtain epidemiological measurements - attack rate, incidence, and prevalence - and implement measures to prevent and treat such epidemic infection.^[26]

Local community base

The great accessibility of patients to their family doctor and its role as the first contact with the patient means from the epidemiological point of view the access to the "numerator." Moreover, care a defined population with geographic base, means the access to the "denominator."^[4-7]

The family doctor works in small geographical bases, which forces to use techniques to manage possible sources of errors in the interpretation of relative risks, mortality rates, incidence rates, etc. However, this knowledge of health data in small geographical areas is very important, as it can show epidemiological characteristics and specific needs in different places, and make it possible to assess the usefulness of sanitary measures, plan management, the preventive, investigative, and socio-sanitary support interventions at the local level.^[3]

When Inge Morath (the great photographer of Austrian origin: Austria, 1823-USA, 2002) plans to photograph the itinerary of the Danube River, between its birth in the German Black Forest and its mouth in the Black Sea, in Romania,

she thinks that this adventure where the river is the axis, is a very ambitious project, which goes beyond nature. Moreover, she thinks: How am I going to photograph this river? The second longest river in Europe, the Danube passes through communities with distinct cultures, languages, and work and life patterns, and has been a source of continuing fascination and inspiration at least since Roman times. Among the many regional inhabitants at the beginning of Morath's work were Austrians, Bulgarians, Croats, Germans, Hungarians, Jews, Roma, Romanians, Serbs, Swabians, Ukrainians, and the Slovenians. On the way to the source of the Danube, in Donaueschingen, she was suddenly overwhelmed with panic: "In how many ways can one photograph water and what can such pictures convey?" Then she calmed down: "A river has a history written on its banks by generations of people who, in effect, have left us their stories there." Morath approached the Danube as a cultural and social landscape. For that reason, in his photographs, there is much more than water. The river is the axis, and the photographer looked at her surroundings to capture and portray spaces.^[27,28]

In the same way, family doctor can go suddenly overwhelmed with panic: How can one have epidemiological vision and what can such vision convey? However, family doctor can calm down: The epidemiological experience of the family doctor is much more than numbers and statistics; the quantitative can be the internal axis, but the family doctor sees the borders and in-between spaces of quantitative data, where generations of people leave their stories of health and disease. The epidemiological experience of the family doctor is nourished by environments, contexts, and spaces.

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