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OPINION ARTICLE

Geoffrey Rose and How to Foster Clinical Research in Spanish Dermatology

Geoffrey Rose y cómo estimular la investigación clínica en la Dermatología española

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Geoffrey Rose (1926-1993) was a genius. His ideas, even 20 years after he developed them, continue to be fresh, simple, and applicable to many aspects of our lives. Rose was a clinician and worked at the London School of Hygiene and Tropical Medicine, where he was a professor of epidemiology (Figure); these two roles fostered a

correspondingly dual vision of medicine that led to the notion that disease can be studied at both the individual and social levels. In other words, there are sick individuals and sick populations, and measures that aim to improve the health of each are different and yield different results.

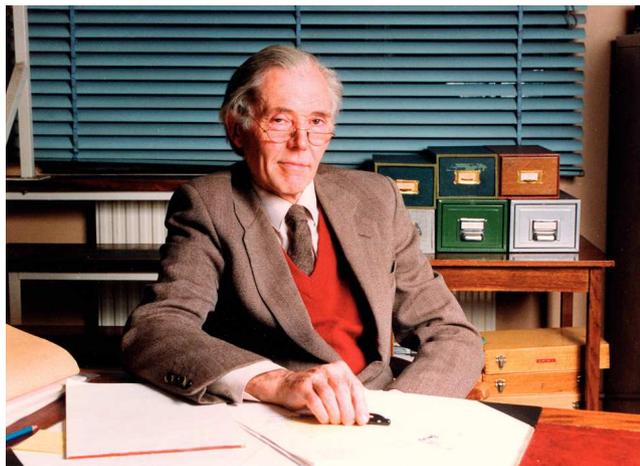


Figure 1 Geoffrey Rose. Used with kind permission of the London School of Hygiene and Tropical Medicine.

Geoffrey Rose on Sick Individuals and Sick Populations

The causes of disease, just like alcohol consumption, smoking and sun exposure, can be viewed from both an individual and a social perspective. Clinicians generally adopt an individual perspective (why is my patient ill?), whereas public health practitioners adopt a social perspective (why is this disease more frequent in this subpopulation?). According to Geoffrey Rose, when problems are studied at a population level, harmful exposure is widely distributed and the degree of risk varies among individuals. A classic example is alcohol consumption. Although many of us drink alcohol, problem drinkers represent only a small proportion; they do not make up a separate group, but rather form the tip of the iceberg of a social problem. The same argument applies to sun exposure. It would be difficult to describe this better than Rose himself does¹:

The problems of sick minorities are considered as though their existence were independent of the rest of society. Alcoholics, drug addicts, rioters, vandals and criminals, the obese, the handicapped, the mentally ill, the poor, the homeless, the unemployed, and the hungry, whether close at hand or in the Third World—all these are

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seen as problem groups, different and separate from the rest of their society.

This position conveniently exonerates the majority from any blame for the deviants, and the remedy can then be to extend charity towards them or to provide special services. This is much less demanding than to admit a need for general or socioeconomic change.

The problem groups do not arise independently of the rest of the society: rather, the average alcohol intake predicts the number of heavy drinkers, the average blood pressure predicts the prevalence of hypertension, the population's overall mental health predicts the burden of psychiatric diseases, and so on. These are facts and they imply that the occurrence of deviance and its associated distress reflect population-wide characteristics, and hence the prevention calls for acceptance of collective responsibility. As Dostoevsky wrote: "We are all responsible for all." (p. 130)

The imperceptible ties that bind us to our environment are the result of forces that pull societies together. Although variability in a society has a positive side, in that it enables adaptation in response to environmental change, groups tend to be intolerant of differences¹:

Society is not merely a collection of individuals but is also a collectivity, and the behaviour and health of its individual members are profoundly influenced by its collective characteristics and social norms. (p. 62)

Social norms rigidly constrain how we live, and individuals who transgress the limits can expect trouble. We may think that our personal life-style represents our own free choice, but that belief is often mistaken. It is hard to be a non-smoker in a smoking milieu, or vice versa, and it may be impossible to eat very differently from one's family and associates. Social norms set rigid limits on diversity. (p. 129)

When fighting a disease and its causes, we can adopt an individual or a social perspective. A social perspective is preferable for problems that affect large numbers of people. If the aim is to change a group, it is more effective in the long run to change the social norm than to try and change minority groups characterized by extreme behavior patterns. Smokers provide a paradigmatic example. An example of individualized focus would be to try and persuade individual smokers consulting their physicians to give up smoking, whereas an example of population focus would be to change the legislation. Once legislative changes are made, following an initial period of resistance the new situation eventually becomes the stable societal norm. However, ethical questions, and situations called paradoxes of prevention, also arise. A measure reflecting an individual focus that produces great benefit for the individuals who are directly affected may have a very small impact on the population. Likewise, a population measure producing great benefit for society may bring far fewer benefits to individuals.

The Scarcity of Clinical Research in Dermatology in Spain: Two Routes to Improvement

What do Rose's ideas have to do with dermatology and clinical research? This epidemiologist's notions are

applicable to positive aspects of society, to social issues such as violence, and even to trivial matters like fashion. For example, in any given country, the average amount spent on gambling is closely linked to the percentage of gamblers, and the average level of mathematical knowledge tends to correlate with the percentage of outstanding mathematicians.² Likewise, the average level of knowledge and involvement in clinical research is probably linked to the number of outstanding researchers in a specialty.

The article by Aranegui et al.³ in this issue of *Actas Dermo-Sifiliográficas* points to several areas where the scientific output of Spanish dermatologists could be improved. According to the definition used by these authors, our clinical research output is low. Most of our clinical research affords a level of evidence of 4, corresponding to a generous definition of case series (more than 2 cases) as clinical research. Research that provides an evidence level of 3 (thus excluding case reports and requiring an epidemiological design) represents only 6% of publications by Spanish dermatologists in the international literature. Articles describing research giving very high levels of evidence, which have a greater potential to guide our practice, are rare. This situation has hardly changed over the period studied by Aranegui et al.³ A comparison between Spanish dermatologists and other groups points to startling differences. For example, Spanish rheumatologists conduct more clinical research, have a higher percentage of research providing high levels of evidence, and produce more such research (greater productivity per member); the productivity of English dermatologists is also far greater in terms of articles giving high-level evidence.³ These data would indicate that there is much room for improvement in Spanish dermatology. The factors with a bearing on this situation include some related to the country itself, and some associated with the specialty, both meriting in-depth study. The fact that we dedicate a great deal of effort to publishing case reports is undoubtedly positive, given that it indicates concern. The time we so spend, however, if accompanied by greater methodological rigor, could be used to more productively generate positive health results for our patients.⁴ Lack of methodological rigor is probably the greatest weakness of Spanish dermatology—and is even more surprising in view of the brilliant dermatologists among us. It is, however, difficult to break the mold and do something different.

What can be done to increase Spanish clinical research productivity? The approach we most use at present is to apply individual therapy; that is, effort and incentives are focused on groups performing good research. Examples are research grants awarded after the evaluation of competitive applications and the awards of the Spanish Academy of Dermatology and Venereology (AEDV). Rose explains how focusing on outlying individuals certainly has advantages, as individual support is usually more feasible and costs less. However, the serious disadvantages of this approach include the difficulty in persuading someone to behave differently from the group, and the failure in modifying the causes of a problem. The resulting solutions have limited impact over time.

A different but complementary approach would be to adopt a population perspective. The challenge is to

improve, even if only slightly, the overall level of research training and experience of the population of Spanish dermatologists. Bringing clinical research closer to our practice of dermatology would lead, in time, to a sustained increase in the amount and quality of such research and to the presence of more groups of excellence. Such measures are likely to be both more socially acceptable and more effective in the long term.

Concrete Proposals

How can the objectives described above be achieved? Good clinical research requires cooperation between suitably trained clinicians and epidemiologists. I would suggest the following important steps:

1. Ensure a minimum level of clinical research training for dermatologists. Two issues are of particular relevance to research training: geographical spread, and pitching the training level so that the knowledge will be useful even to those who will not be doing research.

In regard to geographical spread, the ideal would be for every dermatology department to have at least 1 dermatologist serving as a helper and model. This dermatologist should be in stable employment, have a minimum training level, and be an active researcher. To achieve this goal in the medium term, we need to take full advantage of the opportunities offered by the medical residency period, by building on the receptivity of trainees, and including mandatory research training in the curricula. In the United Kingdom, for example, all medical residents must take a basic training course in research design and evidence-based medicine. The ideal situation would be for dermatology residents to receive research training and participate in at least 1 clinical research study in order to obtain their qualification.

As for training content, it is important to bear in mind the prevention paradox. If we train dermatologists in research, an improvement will be achieved in the group, but the individual benefit will be small. Dermatologists would end up learning concepts and skills that they may not use, and this, logically, could lead to resistance. This could be avoided by designing training content so that it is useful for both the performance of research (that few trainees will end up doing) and for research results interpretation (that all trainees will do). Good research does not require clinicians to be experts in epidemiology—nor indeed would this be efficient. Clinicians merely need to be equipped with sufficient knowledge to generate research topics and interact knowledgeably with epidemiologists. Such knowledge could potentially be very valuable in routine clinical practice.

2. Develop a research support infrastructure. Clinicians with basic epidemiological training need to have access to well-trained epidemiologists. Epidemiologists should also

have some knowledge of the clinical field to be studied, as this would facilitate the development of synergies with clinicians. Perhaps this is the greatest difference between Spanish and UK dermatologists, and between Spanish dermatologists and Spanish rheumatologists, explaining to some extent the corresponding productivity levels: the United Kingdom has a lengthy tradition in epidemiology and an accessible and well-developed research support infrastructure, while Spanish rheumatologists have a very productive research unit (attached to the Spanish Society of Rheumatology) that provides research support to the entire Spanish territory.

3. Foster researcher communication and enhance the social recognition of researchers. To facilitate communication between clinical researchers it is important to have information regarding other centers and physicians working in the same field, to be in contact with other researchers, and to be able to visit other centres—all with a view to cooperation, exchange, and learning from others.

As for social recognition of clinical research, a number of important factors are beyond our scope, such as increasing its weight in medical training or within the Spanish national health service. Other factors, however, can be more easily modified. Our professional associations could fund studies and enhance the visibility of clinical research. Clinical research presentations could be given a more prominent role in our conferences, for example, or could be grouped together for presentation in a more visible manner.

The AEDV and its Foundation can play an important role in implementing many of these proposals. Spanish dermatology has expanded and improved in recent years. We now need to take the necessary steps to move up to the next rung on the ladder, by increasing the ongoing production of high quality clinical research in Spanish dermatology.

Conflict of interest

The author declares that he has no conflicts of interest.

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