

Translational research in ophthalmology: A traineeship model in research knowledge

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journals.sagepub.com/home/ejo**Francisco Zamorano-Martin¹ , Rahul Rachwani-Anil¹ ,
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To the editor:

It is often understood that hospitals that outstand in biomedical research offer a better-quality medical care.¹ However, recent studies point out an increasing gap between the overflowing new generated data and its practical use.² The uprise of translational research is due to the pressing need of novel scientific research being translated into daily clinical practice. Examples that follow this paradigm and that have contributed to a significant improvement of global health include antibiotics, vaccinations, and cancer treatment.²

The current model of translational research is based in a multidirectional Exchange between biomedical research, clinical research and the clinical use of their outcomes. Nevertheless, data exchange may be hurdled by the lack of standard scientific knowledge by the physicians and by the inexperience of understanding different clinical presentations of a certain disease in a patient by the researchers.¹ The awareness of this situation is crucial for every physician, especially trainees. The foundation of clinical experience and scientific research understanding is mainly shaped during traineeship. Most authors agree on the need to generate training plans that reinforce the base of this foundation and to provide trainees with administrative support, funding and time.³ In this sense, some research institutes have started to finance PhD and fellowship programs in translational ophthalmology with the aim to create figures who can shorten the gap between basic and clinical research.

Additional obstacles are the difficulty of funding research, its bureaucracy and the shortage of professionals and companies in charge of delivering academic ideas to the industry.² In order to solve these problems, there is a trend in world-leading research institutions that seek to address this issue by promoting institutes and companies aiming to bring basic research and clinical practice closer together. Another issue reported is the harvest of knowledge based on objective variables that may denote

partiality despite increasing the statistical power and portray statistically significant results. The latter impedes focusing on the clinical aspect of the patient's disease, hence generating a cluster of irrelevant data.¹

Subsequently, we must bear in mind that not all statistically significant data might imply clinical relevance. Clinical significance refers to the practical use of a certain treatment in the daily life of a patient. Genuinely, statistical significance means that it is improbable for a specific outcome to be achieved randomly, and it is designated as the value “p”. Therefore, we may encounter a statistically significant result obtained from a large sample, though this variable might have poor relevance in a patient's daily life, and vice versa. Thus, it should be the physician's responsibility to build a solid criterion based on the scientific published data, and to carry this knowledge into daily clinical practice.⁴ Understanding a patient as a whole and learning how to prioritise subjective variables that are, in essence, the patient's main issues, is one of the pillars in building a physician's personality towards clinical excellence.

Focusing on the field of Ophthalmology, technological innovations have allowed to collect extremely precise data and to compare the outcomes between different procedures. A few examples are optical coherence tomography, topography and meibography, among others. Registered data from these devices are usually precise and are

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subject to low variations although they might not be clinically relevant for patient management. For instance, a study that compares the efficacy of intravitreal injections might report differences in the central foveal thickness although this might not be clinically relevant as no statistically significant differences are observed in terms of the patient's final visual acuity.⁵ It is also usual to find studies that strive to correlate subjective variables with each other without evaluating their impact on the patient's symptoms.⁶

This dilemma allowed the uprising of patient-reported outcome measures (PROM). The main purpose of PROM is to allow the patient to individually self-measure a health issue hence disregarding third-party interpretation. This method may be valuable when studying the behaviour of chronic diseases that lead to impairment in quality of life and pain.⁵ In this manner, PROM may contribute to be an additional asset to other subjective variables such as visual acuity or contrast sensitivity. The subjective data may later be studied along with objective variables, obtained by ancillary testing, to assess the patient's disease in a holistic manner. Despite the promising introduction of PROMs, recent articles claim that most questionnaires are not user friendly, especially considering the age of the majority of ophthalmic patients. Therefore, they advocate the development of PROMs that are practical the patient's use.⁷

Aiming to reduce the gap between the increasing number of published articles in Ophthalmology and its uncertain use in public health, we suggest to implement a research model, that should be implemented from the initial stages of traineeship, based in combining both objective and subjective data, hence targeting practical results that could improve patient's quality of life.

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