



## Research in ophthalmology during traineeship: is it important?

Francisco Zamorano-Martin<sup>1</sup> · Rahul Rachwani-Anil<sup>1</sup>  · Maria Garcia-Lorente<sup>1</sup>  · Carlos Rocha-de-Lossada<sup>2,3,4</sup> 

Received: 9 May 2021 / Accepted: 18 May 2021

© The Author(s), under exclusive licence to The Royal College of Ophthalmologists 2021

It is often understood that leading hospitals in biomedical research provide better quality medical care [1, 2]. However, although there is evidence of the relationship between medical teaching and quality of health care, only few studies have analysed the association between research and hospital outcomes [1–3].

On the other hand, the lack of promoting investigation assignments in most hospitals has resulted in a group of well-trained clinicians, although unmotivated regarding research [4]. Trainees are usually programmed to focus on reducing the patient's waiting lists whereas research activities are optional and must be performed during to non-working hours [4].

Medical traineeship is a key moment in the professional career of doctors. During this period, one should develop the necessary skills to independently manage, diagnose, and treat the diseases that encompass the specific speciality of the traineeship, and moreover initiate the first steps in research. This would ease the initial contact with the knowledge in methodology and statistics, which are both essential to carry out a critical review of the published scientific literature [5, 6]. With this mindset, some residency programmes include biomedical research tasks among its educational objectives [7]. In the field of Ophthalmology, the scarcity of quality research fundamentals that would allow clinicians to understand the current evidence regarding the efficacy and safety of specific medical and surgical interventions point to the need address this issue through research training from earlier stages [8].

Learning how to judge an article published in the scientific literature has a direct implication in clinical practice, as medical practice should be based on the best available evidence and not on the results of individual studies or merely on the experience of professionals [5]. Thus, considering the importance of scientific evidence, systematic reviews and meta-analyses, training specialists should pay special attention to the credibility and relevance of the published data and their potential clinical applications [5]. In addition to establishing a research base enabling a quality critical review of the literature hence a better clinical decision making, early training in research has also proved to accelerate the research career during the later years after traineeship. Acquiring this profile is especially attractive for both private and public employer companies, which have lately shown to recruit more research-oriented profiles [9].

Despite the many advantages that starting this research path from the early years of traineeship may entail, there are numerous obstacles which are discouraging and hinder resilience. The main challenges that trainees mention are limited time, scarce funding, lack of experience, lack senior's support, and the difficulty in finding a mentor [6, 9].

The success in establishing a continuous research training is the figure of the mentor [9]. Most authors agree on the need to generate training plans that reinforce their work and provide trainees with administrative support, funding and the time [6, 9, 10]. On the other hand, reports claim the need to grant residents time to investigate during their working hours and specific resources that may be delegated, such as statistical support, translation, preparation in the design of the study, management of databases, counselling in the writing of the articles, and propagation of the results [6, 9, 10]. These resources would be focused on seeking a high-quality research production as opposed to high-volume. This mindset would empower a medical practice based on evidence and with more meticulous standards [1].

To encourage the development of a research career that complements clinical training during the traineeship of doctors, specifically in Ophthalmology, we propose the

---

✉ Maria Garcia-Lorente  
glorentemaria@gmail.com

<sup>1</sup> Regional University Hospital of Malaga, Malaga, Spain

<sup>2</sup> Department of Ophthalmology (Qvision), Vithas Virgen del Mar Hospital, Almería, Spain

<sup>3</sup> Virgen de las Nieves University Hospital, Granada, Spain

<sup>4</sup> Ceuta Medical Center, Ceuta, Spain

need to implement training plans that aim to encourage the figure of the mentor with all the necessary support, as well as to suggest that trainees should be provided with the required time and resources to generate quality scientific evidence that can then be applied in daily practice, hence improving the care of our patients.

**Author contributions** FZM, RRA, MGL, CRDL: substantial contribution to conception and design, compiling a bibliography, drafting of the manuscript, critical revision of the manuscript for important intellectual content. FZM, CRDL: research group leadership.

## Compliance with ethical standards

**Conflict of interest** The authors declare no competing interests.

**Publisher's note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

## References

1. Tchetchik A, Grinstein A, Manes E, Shapira D, Durst R. From research to practice: which research strategy contributes more to clinical excellence? Comparing high-volume versus high-quality biomedical research. *PLoS One*. 2015;10:1–16. <https://doi.org/10.1371/journal.pone.0129259>.
2. Pons J, Sais C, Illa C, Méndez R, Suñen E, Casas M, et al. Is there an association between the quality of hospitals' research and their quality of care? *J Health Serv Res Policy*. 2010;15:204–9. <https://doi.org/10.1258/jhsrp.2010.009125>.
3. García-Romero A, Escribano Á, Tribó JA. The impact of health research on length of stay in Spanish public hospitals. *Res Policy*. 2017;46:591–604. <https://doi.org/10.1016/j.respol.2017.01.006>.
4. Stranges PM, Vouri SM. Impact of resident research publication on early-career publication success. *Am J Heal Pharm*. 2016;73:895–900. <https://doi.org/10.2146/ajhp150567>.
5. Murad MH, Montori VM, Ioannidis JP, Jaeschke R, Devereaux PJ, Prasad K, et al. How to read a systematic review and meta-analysis and apply the results to patient care: users' guides to the medical literature. *JAMA*. 2014;312:171–9. <https://doi.org/10.1001/jama.2014.5559>.
6. Chan JY, Narasimhalu K, Goh O, Xin X, Wong TY, Thumboo J, et al. Resident research: why some do and others don't. *Singap Med J*. 2017;58:212–7. <https://doi.org/10.11622/smedj.2016059>.
7. Wagner RF, Raimer SS, Kelly BC. Incorporating resident research into the dermatology residency program. *Adv Med Educ Pract*. 2013;4:77–81. <https://doi.org/10.2147/AMEP.S44389>.
8. Salviat F, Guedj M, Bodaghi B, Sahel JA, Tubach F, Dechartres A. Quality of Evidence in Ophthalmology: An Overview of Cochrane Reviews. *Ophthalmology*. 2021;128:330–32.
9. Hebert RS, Levine RB, Smith CG, Wright SM. A systematic review of resident research curricula. *Acad Med*. 2003;78:61–68. <https://doi.org/10.1097/00001888-200301000-00012>.
10. Ercan-Fang NG, Mahmoud MA, Cottrell C, Campbell JP, MacDonald DM, Arayssi T, et al. Best Practices in Resident Research- A National Survey of High Functioning Internal Medicine Residency Programs in Resident Research in USA. *Am J Med Sci*. 2021;361:23–29. <https://doi.org/10.1016/j.amjms.2020.08.004>.