



Chinese ophthalmic school education: present and future

Kangjun Li

Xi'an Aier Eye Hospital Refractive Center, The AIER Eye Institute of Central South University, Xi'an 710061, China

Correspondence to: Kangjun Li, MD, PhD. Xi'an Aier Eye Hospital Refractive Center, The AIER Eye Institute of Central South University, Xi'an 710061, China. Email: kj4907630@foxmail.com.

Received: 30 June 2019; Accepted: 11 August 2019; Published: 17 September 2019.

doi: 10.21037/aes.2019.09.01

View this article at: <http://dx.doi.org/10.21037/aes.2019.09.01>

The Zhongshan Ophthalmic Center (ZOC), established by Professor Yaozhen Chen (Eugene Chan) and Professor Wenshu Mao (Winifred Mao) in October 1965, has enjoyed worldwide fame due the good performance and professional skills of the faculty. The past 55 years have witnessed huge successes for the ZOC from one generation to another, including individuals such as Prof. Shaozhen Li, Prof. Jiaqi Chen, Prof. Jian Ge, Prof. Minbin Yu and Prof. Yizhi Liu, etc. The Center was the first 3-A-Class ophthalmic hospital in China, the only State Key Laboratory for Ophthalmology in China and was ranked first for nine consecutive years in the ophthalmology category for the Specialized Department List for Chinese Hospitals. At present, it has become a “Whampoa military academy” training center for Chinese ophthalmologists, and numerous ophthalmologists are proud of being born in “ZOC”.

The ZOC has earned its reputation for teaching and education. The center is one of the earliest of its kind to award master's and doctorate degrees in ophthalmology in China. The center also serves as a national base for continuing education and a center for the standardized training of resident doctors. As for clinical training, there are medical students studying in the center, along with PhD students, master's students, and students from a continuous program from master's to PhD.

The curriculum of Chinese medical education is different from the American system. In the United States, it is necessary to complete the traditional 4-year college general education before medical application. In contrast, there are two main medical training pathways in China. One is the “5+3+3” mode: high school students enter medical colleges after taking The National College Entrance Examination, commonly known as the “Gaokao”, whose admission qualification is subject to personal interest and examination

results. After completing 5 years of undergraduate medical education (“5”), students can apply to a continuous program. After passing a postgraduate entrance examination, students enter ophthalmology and subspecialties (such as cataract, glaucoma, refractive surgery, etc.) training. The “3+3” portion of this pathway runs as follows: the first 3 years are for general ophthalmology training (for master's degree) and the second 3 years are for subspecialty ophthalmology and science training (for PhD degrees). After passing a series of clinical examinations and completing a formal thesis defense, students finally obtain a doctor's degree (MD plus PhD). The other pathway is the “8” mode. After entering university, students are trained in general education for 6 years, enter clinical training for ophthalmology in the last 2 years, and graduate with a medical doctor degree (MD).

It is important to note that all applicants are required to go through a written examination and interview process before entering the ophthalmology department for both modes. Written examination subjects include English, ophthalmology, and molecular biology. During the interview, interviewers pay more attention to candidates' traits including basic medical knowledge, interest in scientific research, understanding of the forefront of subjects, and other relevant issues.

In China, no matter if it is the “5+3+3” or the “8” mode, medical students have the same curriculum in preclinical training, which includes subjects like anatomy, histology and embryology, microbiology and immunity, biochemistry and genetics, physiology, pharmacology, pathology, behavioral medicine, etc. which together are similar in content to the Step 1 of the United States Medical Licensing Examination (USMLE). In the clinical years training, the curriculum includes clinical knowledge, like diagnostics, internal medicine, surgery, obstetrics and gynecology,

pediatrics and facial features, etc., and clinical skills, such as history collection, doctor-patient communication skills, writing of medical records, etc., which together are similar to the Step 2 content of the USMLE. At present, Chinese medical students are encouraged to participate in research work during preclinical or clinical years, in order to learn some basic experimental skills and gradually develop scientific interest. Furthermore, some students are trained as “clinician-scientists” by the MD-PHD program. This program assesses and cultures a physician’s ability to transform clinical problems into basic scientific questions, in order to encourage analytical problem solving through scientific thinking and step-by-step experimental methods. The rationale behind this is to achieve a mutual transformation between clinical and scientific research, which ultimately benefits patients through the successful treatment of complicated diseases.

Until now, Chinese medical students have chosen their medical specialization mainly by combining personal interests, family suggestions, remuneration considerations, and other factors. Both in China and Canada, the workload of medical students and residents is very heavy. However, it is important to note that most Chinese doctors are not paid in proportion to their labor at present. Therefore, Chinese medical students are not as competitive as Canadian medical students in applying for residents or surgery subspecialties. Recently, with the marketization of China’s medical capital and the construction of high-end medical institutions (such as AIER Eye Hospital group*), Chinese medical students are having more choices for resident training and career planning. We hope that with the growth of the economy and the growing cooperation between universities and companies (as in Silicon Valley), more Chinese doctors will become clinical scientists by improving clinical skills and

developing scientific research through numerous platforms, and that this will, in the end, show an increased benefit to patients.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the Guest Editor (Tianwei Ellen Zhou) for the series “Medical Education Column” published in *Annals of Eye Science*. The article did not undergo external peer review.

Conflicts of Interest: The author has completed the ICMJE uniform disclosure form (available at <http://dx.doi.org/10.21037/aes.2019.09.01>). The author has no conflicts of interest to declare.

Ethical Statement: The author is accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/aes.2019.09.01

Cite this article as: Li K. Chinese ophthalmic school education: present and future. *Ann Eye Sci* 2019;4:32.

*AIER Eye Hospital Group: A unique ophthalmology hospital group in China. By 2016, AIER Eye Hospital constituted more than 70% of the health insurance population with a more than 4 million annual outpatient volume and 186 branches all over China. AIER Eye Hospital Group has committed itself to introducing and adopting the international advanced ophthalmology technology and hospital management concept. AIER Eye Hospital has a professional team consisting of ophthalmologists, nurses, and physician assistants, who are multilingual (English, Japanese, Korean, French, Hindi, Cantonese, and Mandarin) with an international academic background and work experience.