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View Point

Education Section

Ophthalmology Teaching-Learning in Undergraduate Classes: Roadblocks and The Remedies

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ABSTRACT

The curriculum needs to run apace with the changing morbidity pattern and social needs. Teaching methodology requires constant evolution. With a static curriculum and teaching methods undergraduate ophthalmology proves difficult for many students. This article briefly analyses the ophthalmology curriculum, highlights the problems of teaching and offers some solutions.

Keywords: Assessment, Curricular reform, Medical education, Teaching

INTRODUCTION

The curriculum needs to run apace with the changing morbidity pattern and the social needs. Teaching methodology needs to keep pace with changed curriculum and technological advances. Have we succeeded? In this short review we examine the undergraduate ophthalmology curriculum, discuss the problems of teaching, and offer solutions.

The MCI Graduate Medical Education Guideline

The pioneers of medical education in India aimed to frame the curriculum suited to the needs of the independent Nation. Broad goals of teaching ophthalmology are:

'To provide such knowledge and skills to the students that shall enable him to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Program for the Prevention of Blindness and rehabilitation of the visually impaired' [1].

However, in practical teaching, often the global problems get priority over the local, the tertiary care over the primary care, and the rare diseases over the common ailments.

The policy makers spelt out the objectives of training with a well-defined 'knowledge' component to be gained and skills to be acquired:

'The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially Neurosciences, Otorhino-laryngology, General surgery and Medicine' [1].

Compartmentalized teaching of subjects offers little scope for integration. Revisions of curriculum have failed to remedy this anomaly. Therefore, the curriculum remains formidable for the students and unsuitable to the social needs. There is a need for laying more stress on practical skills during training and assessment as perceived from the data based on faculty and student perception of undergraduate curriculum [2].

Curriculum Content: The Need

Sound management means allocation of resources according to the priorities. Population-based health and morbidity surveys define the priorities at community level. Surveys require resources and expertise. Developing countries have few population-based health surveys. Diseases considered major national public health problems receive resources from the Government. Therefore, we need to identify afresh morbidity pattern and refashion the curriculum reflecting the social needs.

Undergraduate Ophthalmology: The Current Content

Undergraduate ophthalmology curriculum is vast. More time is devoted to transfer of knowledge through didactic lectures. Acquisition of skills and development of attitude takes a backseat. Blinding diseases- Cataract, trachoma, vitamin A deficiency- are the priority and receive attention. Many other diseases causing significant visual impairment remain out of focus. Refractive error, glaucoma, and trauma are examples. Didactic lectures include all – the common, the uncommon and the rare. Clinical examination remains limited to naked eye and torch-light examination. Torch-light examination detects diseases like, cataract, trachoma, corneal ulcer, Bitot's spot. Signs of glaucoma, diabetic retinopathy and uveitis remain imaginary in the absence of slit lamp examination, tonometry and ophthalmoscopy.

Summative examinations test the skills. Curative aspect of disease management takes precedence over the preventive aspect. Also, in the absence of vertical integration of teaching students fail to visualize the clinical aspects of diseases like trachoma, trauma, vitamin A deficiency, and refractive errors and amblyopia when they are taught these topics in community medicine classes.

Problems of Teaching

Didactic lectures form the core of teaching today. We are yet to graduate to problem-based learning. Due to limited teacher-student interaction didactic lectures remain a weak tool of one-sided transfer of knowledge. Audiovisual aids help bridge this gap. However, audiovisual aids themselves sometimes prove a barrier due to an inherently unrealistic picture. Imagine, a student watching a picture of a 3 mm corneal ulcer on a 6-feet-by-4-feet LCD screen. This corneal ulcer, hardly discernible on torch-light examination appears 4 inch wide. Clinical postings are supposed to bridge the gap. In the clinics settings, signs requiring aid of special instruments remain imaginary. That the students be encouraged hands-on experience with slit-lamp examination, ophthalmoscopy and Humphrey field analysis, is a point worth a consideration. Also, obsolete methods of examination continue to occupy space in the ophthalmology curriculum and textbooks and in summative examination. Fincham's test, for differentiating colored halos due to cataract from those due to angle-closure glaucoma, examination for Purkinje's images in aphakic/ pseudophakic eyes, etc, are the cases in point. Thus one-way didactic teaching, lack of problem-based learning and hands-on experience and obsolete curricular content prove barriers in teaching-learning.

Formative and Summative Assessment

The way the students learn is largely determined the way they are assessed [3]. Assessment requires more emphasis on formative assessment and augmentation of the traditional methods of examination with introduction of valid and reliable tools like Objective structured clinical examination (OSCE) [4]. OSCE offers a valid and reliable testing of a wide range of skill and attitude [5]. Current pattern of one long case, always a case of cataract and two short cases offers little room for assessment of a spectrum of skills.

The Solution

Undergraduate teaching of Ophthalmology requires reorientation and reconfiguration. The remedy involves reform both in the curriculum design and teaching methodology. We require curriculum tailored to the identified community health needs. The morbidity pattern should form the basis of refashioned curriculum. Topics relevant to broad view of medicine, otolaryngology, neurology and surgery deserve space. Teaching sessions should begin with trips to the local community, say, for a school health survey or eye screening programs for the elderly, or eye health survey among rural/urban citizens or industrial workers. Effectiveness of community-based outpatient setting for clinical education versus hospital-based education has been demonstrated [6]. During these field trips the students would gather hands-on experience at visual acuity testing and torch-light examination of the eye. Experience gained from the field trips would sensitize the students to the common problems. Detailed self-study should follow. Back in the class-room, introduction to problem-based learning will impart the students problem-solving skill. In a study for pilot program for curricular renewal in ophthalmology, significant knowledge gains and high student satisfaction was noted among small groups of students in a modified problem-based learning format [7].

During the problem-based learning (PBL) the teachers should involve the students in a thread-bare discussion to clarify the doubts. Later, during the clinical postings the students should be encouraged to use ophthalmoscope, slit-lamp, tonometer and automated field analyser. Students with special interest in special equipments should be allowed short-term elective courses. A redesigned curriculum shall result in integration of the classroom-teaching and clinical training. Finally, reformed method of formative and summative assessment that objectively tests skill and attitude will reorient learning. Thus a self-directed, goal-oriented, problem-based learning will result in acquisition of knowledge, skill and attitude where the student is the prime-mover and the teacher only has a supportive role.

CONCLUSION

This paper examines the undergraduate ophthalmology curriculum and discusses the problems of teaching-learning. The curriculum that needs to constantly align to the changing morbidity pattern has remained static. Also the current method of teaching and assessment prove an impediment in acquisition of skill and attitude. Lack of vertical integration of teaching leaves gap in transfer of knowledge and skill. We suggest constant review of curriculum, vertical integration of teaching, introduction of problem-based learning, and introduction of OSCE in formative and summative assessment as comprehensive solution.

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