



A STUDY ON PERSPECTIVES ABOUT LEARNING METHODS AND TRAINING IN OPHTHALMOLOGY RESIDENTS: A CROSS SECTIONAL STUDY

Ophthalmology

Dr. Kavitha Ravuri	Postgraduate, Department of Ophthalmology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India.
Dr. Pakalapati Pradeep*	Professor, Department of Ophthalmology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India. *Corresponding Author
Dr. Sumalatha Sai Keerthi Mathukumalli	Associate Professor, Department of Ophthalmology, Alluri Sitarama Raju Academy of Medical Sciences, Eluru, West Godavari District, Andhra Pradesh 534005, India

ABSTRACT

Background And Aim: This study documents a survey of ophthalmology postgraduate students on the subject of their residency training. The purpose of this study was to evaluate how ophthalmology postgraduates were satisfied with their training and to find any shortcomings from the perspectives of ophthalmology residents. **Methods:** This was a cross sectional study. A total of 200 ophthalmology residents were considered. A questionnaire cum feedback form was circulated to ophthalmology residents who attended ophthalmological state conference at ASRAM medical college, eluru. The questionnaire was considered from the survey which was pre-validated and with few additional questions. The study duration considered was for two months, from October 2022 to December 2022. **Results:** One twenty-one (of the 200) students returned completed forms (62.02%). Case presentation with demonstration and wet-lab learning were the most preferred methods of training. Exposure to different out-patient skills was adequate with more deficiency in squint evaluation and pediatric visual acuity testing. Deficit was also found in exposure to diagnostic tests like hess diplopia charting, pachymetry, fluorescein angiography and synoptophore. From the study, it was found that non-cataract surgical exposure and training was being neglected. Majority of the students felt that exposure and training is needed for contact lens evaluation and handling eye-bank calls. Residents feedback inferred that level of satisfaction was not adequate in acquisition of both clinical knowledge and surgical skills. **Conclusion:** The current study showed that, on the whole, the participated residents believe that their training is unsatisfactory and continued to express a desire for better ophthalmology training in all facets.

KEYWORDS

Ophthalmology residents, perspectives, residency training, satisfaction

INTRODUCTION

All medical speciality training is built on the residency training of postgraduate medical students. A unique aspect of ophthalmology is the opportunity to practise both medicine and surgery. The profession entails having the skills necessary to accurately and efficiently diagnose, treat, and manage the most prevalent conditions seen in clinical practise. Therefore, it ought to be a very fulfilling field for graduate students.

However, this appears not to be the case. Most ophthalmologists in India feel the need to pursue extra training after graduation and hardly ever feel confident enough to practise ophthalmology on their own.^{1,2} Ophthalmology training problems in India have been researched from the perspectives of both trainers and residents.^{3,4}

In 2002, a survey on ophthalmology speciality training in India revealed both its strengths and drawbacks. But it was directed to the heads of the ophthalmology department. Rarely, the perspective of the trainees was taken into consideration when developing a structured instructional programme.

The majority of research have been done with an intent to evaluate residents' skills during ophthalmology residency programmes using objective criteria, but just a few studies have assessed resident assessments of their satisfaction with their ophthalmology residency.

The purpose of this study was to evaluate how ophthalmology postgraduates were satisfied with their training and to find any shortcomings from the perspectives of ophthalmology residents.

PATIENTS AND METHODS

Inclusion Criteria

This was a cross sectional study. A total of 200 ophthalmology residents were considered. A questionnaire cum feedback form was circulated to ophthalmology residents who attended ophthalmological state conference at ASRAM medical college, eluru. The questionnaire was considered from the survey which was pre-validated and with a few additional questions.

Exclusion Criteria

Residents who were not willing to participate. Incomplete responses

were not considered.

The questionnaire contained questions with rating scales between 0 and 4 about various methods of teaching, and YES or NO questions about exposure to different out-patient skills, diagnostic skills, their surgical exposure, about monthly exams, camps, eye-bank and level of satisfaction of students was graded. Request was made to fill the questionnaire and asking for the completed form after three days of conference. If they had not filled it, the request was repeated through google form after a week. The residents were free not to put their name at the end, but solicited for details of age, sex and number of years of residency completed. All the responses were tabulated and analysed with Statistical Package for Social Sciences (SPSS) 26 trailversion. The study protocol obtained institutional research committee and ethics committee approval to conduct the study. No risks on the part of study population as it was only a cross sectional study and it did not involve any intervention by the principal investigator.

RESULTS

One twenty-one (of the 200) students returned completed forms (62.02%) among which 101 (83.5%) were females and 20 (16.5%) were males.

The mean age of the participants was 26.81 ± 2.357 .

Out of 121 participants, only 22 residents chose ophthalmology as first choice, while 65 included ophthalmology as one among their top three choices and remaining 34 students were pursuing ophthalmology with it not being at least one among their top three choices.

Modality Of Learning

The mean and median scores given by the students for seven modalities of teaching are in Table 1.

Tableno.1 showing Residents' perspectives regarding different modalities of learning

Modality of Learning	Mean	Median
Didactic lectures with power point	2.47	2
Didactic lectures without power point	1.85	2

Seminar - one person presenting, others participating	2.00	2
Case presentation, with demonstration on a patient	3.10	3
Wet lab, learning on animal eyes	2.94	3
Journal club	2.40	2
Group discussion	2.83	3

Out-patient skills

When residents were questioned about their exposure to outpatient skills, 118(97.5%) residents responded that they were well exposed to refraction, slit-lamp examination and direct ophthalmoscopy, followed by keratometry (95%). Whereas, out of 121 participated residents, 81 (66.9%) residents were exposed to squint evaluation (66.9%) and only 45(37.2%) students were exposed to pediatric visual acuity testing.

Diagnostic Tests

Feedback regarding exposure to diagnostic skills showed that, most of the residents were well trained in doing A-Scan (100%), B-Scan (93.4%), fundus photography (86.8%) and Nd: YAG laser capsulotomy(80.2%). However, results showed that there was no adequate exposure and training in diagnostic procedures like Hess diplopia charting (37.2%), pachymetry (20.7%) fluorescein angiography (19%), and synoptophore (16.5%).

Surgical Exposure

Analysis of surgical exposure in each specific ophthalmic surgical areas showed that there is adequate exposure to cataract surgeries [manual SICS-95%, phacoemulsification-66.1%], pterygium excision (95%) and chalazion removal(85.1%). Areas perceived as more deficient of exposure were refractive surgery (2.5%), keratoplasty (2.5%), retinal detachment surgery (7.4%), strabismus correction(9.1%) and vitrectomy(16.5%).

Majority of the students felt that exposure and training is needed for contact lens evaluation (103 students-85.1%) and handling eye-bank calls (99 students-81.8%). However, feedback revealed that exposure in handling out-reach camps was adequate(90.9%). All 121 students felt that monthly exams/mock tests were helpful.

Table No.2 Showing Residents' Level Of Satisfaction In Acquiring Clinical Knowledge And Surgical Skills

	Clinical knowledge (%)	Surgical skills (%)
NOT AT ALL SATISFIED	0	20(16.5%)
SLIGHTLY SATISFIED	37(30.6%)	52(43.0%)
MODERATE SATISFACTION	61(50.4%)	37(30.6%)
VERY SATISFIED	19(15.7%)	8(6.6%)
EXTREME SATISFACTION	4(3.3%)	4(3.3%)
TOTAL	121(100%)	121(100%)

Table No.3 Showing Level Of Satisfaction Among Three Years Ophthalmology Residents

		N	Mean	Std. Deviation	Sig.
Level of satisfaction in acquiring Clinical knowledge	1ST YEAR	55	2.82	.748	0.086
	2ND YEAR	18	3.28	.826	
	3RD YEAR	48	2.90	.751	
	Total	121	2.92	.770	
Level of satisfaction in acquiring Surgical skills	1ST YEAR	55	2.25	.799	0.020
	2ND YEAR	18	2.94	1.211	
	3RD YEAR	48	2.29	.944	
	Total	121	2.37	.950	

Responses of three-year residents were analysed using ONE-WAY ANOVA test.

Table 3 shows that there is significant difference in level of satisfaction in acquiring surgical skills between residents from three years with $p=0.020(p<0.05)$.

DISCUSSION

The study included feedback of 121 ophthalmology postgraduate students.

Out of the participated postgraduates more female preponderance reflects that, ophthalmology is being chosen as sought-after career option for female medical graduates.

In our study, case presentation with demonstration and Wet-lab learning were the most preferred methods of training. Didactic lectures without PowerPoint were less popular, similar to the previously published IJO study⁴, stating that monologues with little interaction were not desirable. The next preferred modality of learning from the resident's perspective is group discussion.

Squint evaluation, paediatric visual acuity testing and diplopia charting are skills imperative for general ophthalmologists, and this is a requirement which needs to be addressed in the teaching curriculum. The emphasis of surgical training is mainly on cataract surgery and few other surgeries like pterygium excision and chalazion removal. Non-cataract surgical exposure and training was being neglected. This perceived gap in ophthalmic training programmes can be filled by implementing an organised surgical curriculum.

The obtained results show that, residents cited their ability to make a good clinical practice in diagnosis and treatment of cataracts, minor procedures and eyeglass prescription, but still lacked enough competencies in posterior segment and glaucoma or pediatric ophthalmology. Alwadani et al did a study about the forecasting of young ophthalmologists in Saudi Arabia, which showed the residents' preferences for a subspecialty training in anterior segment was the most popular.⁸

Majority wanted training in more aspects of ophthalmology, including eye-bank calls and contact lens evaluation. The students also wanted monthly examinations/mock tests, for regular evaluation.

The results show that the level of satisfaction from the perspective of recent graduates of Ophthalmology residency training: 19% were very satisfied or extremely satisfied with the acquisition of clinical knowledge and 9.9% were very satisfied or extremely satisfied with the acquisition of surgical skills. It infers that level of satisfaction was not adequate in acquisition of both clinical knowledge and surgical skills.

The IJO study by Gogate et al. had concluded that the residency program in ophthalmology was not up to expectations of postgraduate students in many teaching centres in Maharashtra.⁴ Similarly, another IJO study by Ajay k et al. conducted at the 4-day annual ophthalmology postgraduate teaching program for final-year postgraduate students, in February 2013, at Hubli, Karnataka, concluded that the students still felt the need for improved training across all aspects of ophthalmology.⁷ Eight years later, in a different Indian state, our survey has produced similar results.

Thomas and Dogra had concluded that drastic changes in training and patient care were needed in most Medical College Ophthalmology Departments. As Thomas and Dogra had mentioned, "training and eye care in teaching departments should conform to modern standards and follow preferred practice patterns".²

CONCLUSION

From this study we can infer that, the opinions and impressions of graduates offer some important data to evaluate if the residency training period is sufficiently preparing them for the profession from their viewpoints. On the whole, the participated residents believe that their training is unsatisfactory and continued to express a desire for better ophthalmology training in all facets.

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REFERENCES

- Grover AK. Postgraduate ophthalmic education in India: Are we on the right track? Indian J Ophthalmol 2008; 56:3-4.
- Thomas R, Dogra M. An evaluation of medical college departments of ophthalmology in India and change following provision of modern instrumentation and training. Indian J Ophthalmol 2008; 56:9-16. DOI: 10.4103/0301-4738.37589
- Murthy GV, Gupta SK, Bachani D, Sanga L, John N, Tewari HK. Status of specialty training in ophthalmology in India. Indian J Ophthalmol 2005; 53:135-42. DOI: 10.4103/0301-4738.16182
- Gogate P, Deshpande M, Dharmadhikari S. Which is the best method to learn ophthalmology? Resident doctors' perspective of ophthalmology training. Indian J Ophthalmol 2008; 56:409-12. DOI: 10.4103/0301-4738.42419
- Ajay K, Krishnaprasad R. Feedback of final year ophthalmology postgraduates about their residency ophthalmology training in South India. Indian J Ophthalmol 2014; 62:814-7. DOI: 10.4103/0301-4738.138628
- Biswas P, Gogate PM, Maskati QB, Natarajan S, Verma L, Bansal PK. Residency

- Evaluation and Adherence Design Study III: Ophthalmology residency training in India: Then and now—Improving with time? *Indian J Ophthalmol* 2018; 66:785-92.DOI: 10.4103/ijo.IJO_108_17
7. Millan and de Carvalho: Satisfaction with ophthalmology residency training from the perspective of recent graduates: a cross-sectional study. *BMC Medical Education* 2013 13:75. DOI:10.1186/1472-6920-13-75
 8. Alwadani F, Alrushood A, Altokhy H, Alasbali T. A forecast of ophthalmology practice trends in Saudi Arabia: A survey of junior residents. *Middle East Afr J Ophthalmol*. 2010;17: 343–348.DOI: 10.4103/0974-9233.71606
 9. Khaliifa YM, Bogorad D, Gibson V, Pfeiffer J, Nussbaum J. Virtual reality in ophthalmology training. *Surv Ophthalmol* 2006;51:529-73.
 10. Mendis L, Adkoli BV, Adhikari RK, MuzaherulHaq M, Qureshi AF. Postgraduate medical education in South Asia. *Br Med J* 2004;328:779-81.
 11. <https://www.nmc.org.in/wp-content/uploads/2019/09/MS-Ophthalmology.pdf>.