

# Evaluation of Satisfaction of Ophthalmology Residents and Graduates from Ophthalmology Training in Farabi Eye Hospital, Iran

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## Abstract

**Purpose:** To evaluate the adequacy and efficiency of training programs of ophthalmology residency in Iran for achieving the planned objectives in their program, as well as to evaluate the proficiency of such programs in preparing residents to enter independent clinical practice as a general ophthalmologist.

**Methods:** A closed-ended questionnaire was distributed between 89 residents or recently graduated ophthalmologists of Farabi Eye Hospital in Iran to measure their level of satisfaction about outpatient clinics and training in the operating rooms and scientific programs in the four-year long course of residency.

**Results:** Subjects generally expressed high amount of satisfaction with their programs in the residency era. The most frequently expressed weakness in their training was in the field of didactic and intellectual teaching. Most of the subjects proclaimed that the time for didactic teaching should be increased in nearly all subspecialty fields. All of the subjects declared to have plans for a post-residency fellowship. In the aspect of number of surgical procedures, and suitability of course duration for different subspecialty fields, subjects were satisfied in all fields but retina, that some of them believed it is longer than needed.

**Conclusion:** Residents in Farabi Eye Hospital retain a high level of satisfaction in achieving many of the key competencies for practice. Modification of current curricula in terms of quality is needed to improve the educational experiences of newly trained ophthalmologists.

**Keywords:** Ophthalmology Residency, Training Curriculum, Resident Satisfaction

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## Introduction

Iranian academic medical education system retains international acclaim for its high standards and usually graduates of this system, acquire high grades in formal international exams. This is in part, due to the strict national accreditation guidelines and regulatory processes that academic medical education programs must match up with, in order to obtain official quality certification from the Iranian National Board of Health Ministry. On the other hand, lots of patients available in our educational centers, with various chief complaints and ocular problems, make the residency period, an appropriate course of time to obtain adequate expertise to practice as a general ophthalmologist after graduation.

In recent years, some countries have published some requirement that residents should pass before being able to take Board certificate. These documents define goals and expectations in knowledge, competencies, and technical capabilities that a postgraduate ophthalmologist should have obtained.

As we know, Iranian ophthalmology residency program has not been systematically evaluated corresponding these standards. In the present study, we evaluate the efficiency of Iranian ophthalmology residency training programs at Farabi Eye Hospital in achieving the objectives defined in their program, as well as to evaluate the effectiveness and proficiency of such programs in preparing residents for entering clinical practice. Farabi Eye Hospital is the largest eye hospital in Iran with more than 60 scientific staff and more than 3000 outpatient daily visit and 300 daily surgeries.

## Methods

Farabi Eye Hospital residents in years 3 and 4, as well as graduated ophthalmologists between years 2008 to 2010, were invited to participate in answering a 30-item inquiry during year 2010, summer. Subjects were questioned about their satisfaction and experiences in the course of ophthalmology residency.

## Results

Eighty-nine residents and newly graduated ophthalmologists were included in this study. Table 1 illustrates the overall satisfaction of residents with their residency program. The

vast majority of subjects (90%) stated that they were overall satisfied with their residency programs. Subjects were also satisfied with the quality of teaching in most settings; however, it seems that teaching staff should spend more time for didactic comprehensive teaching (Table 1). Subjects were also pleased with their overall operative experiences; majority of them (100%) rated case numbers, complexity of their problems, and variety of ocular problems as excellent (Table 1). Having permission to observe any surgical procedure in various subspecialty fields was also overall rated well; at the other hand, many subjects stated that they had insufficient exposure in some areas such as refraction (72.5%).

Table 2 shows the self-reported confidence of subjects in achieving competency in various objectives. In the areas of cataract and refraction training, most subjects felt comfortable prescribing glasses (70%) and contact lens fitting (65.5%), and performing phacoemulsification (100%), however, in the field of retina, 22.5% of subjects felt unsatisfied with performing pan retinal photocoagulation (PRP). Areas of weakness identified within oculoplastic and orbit surgery included cosmetic surgical procedures (29.7%). Within the realm of pediatric ophthalmology, most subjects felt comfortable performing pediatric clinical assessments (92.8%), as well as performing strabismus surgery (92.9%). In the case of emergency patients, 100% of subjects were satisfied with the skills they obtained in the residency period.

Most individuals (85%) felt that the amount of time allocated to clinical and surgical training during residency was adequate (Table 3). Majority of subjects (85%) proclaimed the need for a one month free flexible course to pass as a compensatory course for their weaknesses (Table 4).

The majority of residents stated that both the clinical and surgical training during residency prepared them for practice (97.8 % and 100%, respectively) (Table 1). However, In the case of general ophthalmology clinic that residents attend there in the first year of their practice as an ophthalmology resident, and visit the patients in the first line, and are supervised by a general ophthalmologist, it

seems that there is lower amount of visit in the emergency clinic (Table 4). satisfaction (70%) in comparison to patient

**Table 1.** Overview of residency program satisfaction in Farabi Eye Hospital Residents

Questions	Excellent (%)	Good (%)	Poor (%)
What is your overall level of satisfaction with your ophthalmology residency program?	45	45	10
What is your overall level of satisfaction with your ophthalmology residency selection?	85	15	0
How do you feel about the operative experience in the following areas?			
Case volume	100	0	0
Case complexity	86.4	13.6	0
Case variety	100	0	0
How do you feel about the quality of teaching in the following settings?			
Formal didactic teaching	48.7	40.5	10.8
Operating room	88.8	11.2	0
Clinic/outpatient office	65.7	31.5	2.8
Subspecialty divisions didactic teaching	55.5	38.8	5.7
How do you feel about the role of senior residents on your teaching?	47.5	42.5	0
How do you feel about your abilities in managements of traumatic patients?	92	8	0
How is your satisfaction about the following settings?			
Para-clinic	100	0	0
Equipments for patients examinations	97.3	2.7	0
Medical records	56.3	41	2.7
New examination settings (e.g. DOPS)	57.8	30	12.2

**Table 2.** Self-reported competency of residents in various objectives during residency (n=89)

objectives	Excellent (%)	Good (%)	Poor (%)
Cornea and Cataract			
Performing ECCE	46.3	50	3.7
Performing phacoemulsification	89.2	10.8	0
Performing pterygium surgery	75	17.8	7.2
Performing Nd-YAG capsulotomy	71.3	17.8	10.9
Describe imaging (topography, Orbscan, ...)	15.3	38.4	46.3
Refraction			
Prescribing glasses	40	30	30
Prescribing contact lenses	27.5	38	34.5
Retina			
Performing posterior segment examinations (including scleral depression)	82.9	17.1	0
Diagnosis of posterior segment lesions	53.5	46.5	0
Performing scleral buckling	41.7	51.8	7.5
Performing PRP	55.5	22.2	22.3
Explanation of FA	46.4	42.8	10.8
Explanation of OCT	42.7	53.5	3.8
Glaucoma			
Performing glaucoma surgeries	64	24	12
Performing gonioscopy	48.1	29.6	22.3
Performing YAG-PI	66.7	26	7.3
Explanation of perimetry	59.2	37	3.8
Explanation of GDX	69.1	23	7.9
Oculoplastics			
Performing lid surgical procedures	88.4	7.6	4
Performing lacrimal surgical procedures	89	11	0
Performing enucleation	92.2	7.8	0
Performing cosmetic surgeries	18.5	51.8	29.7
Explanation of orbital CT-scan	60.6	39.4	0
Explanation of orbital MRI	24.9	67.8	7.3
Pediatric and Strabismus			
Performing strabismus surgery	71.5	21.4	7.1
Performing pediatric clinical assessments	71.4	21.4	7.2
Managing children with strabismus	64.2	21.4	14.4
Emergency			
Managing globe rupture	89.2	10.8	0
Managing other emergent patients	91.3	8.7	0

**Table 3.** Residents' responses to the "what do you think about the adequacy of the course duration for each subspecialty division?"

Division (months)	Good (%)	High (%)	Less (%)
Cornea and anterior segment <sup>7</sup>	65	0	35
Retina <sup>5</sup>	45	55	0
Emergency ward <sup>3</sup>	90	5	5
Orbit and Oculoplastics <sup>4</sup>	87.5	12.5	0
Strabismus <sup>3</sup>	92.5	7.5	0
Glaucoma <sup>3</sup>	90	0	10
Refraction <sup>1</sup>	72.5	0	27.5

**Table 4.** Residents' responses to questions regarding order of subspecialties, preference, and quality of learning in some clinics

Questions	Response (%)
Which subspecialty program do you think is better as a beginning course for residency program?	
Emergency ward	45
Cornea	2.5
Retina	2.5
Plastics	40
Glaucoma	0
Refraction	0
Strabismus	10
Do you think that it would be useful if there were one month free at your program that you could choose between subspecialties to pass one month compensatory course?	
Yes	82.5
No	17.5
After residency training, do you feel any interest in any clinical subspecialty area to resume in the future?	
Cornea	42.5
Retina	25
Plastics	10
Glaucoma	32.5
Strabismus	0
Do you think your training program at general ophthalmology clinic at first year of residency, prepared you adequately for your learning?	
Yes	30
No	70
Did you feel your training program at emergency clinic prepared you adequately for your learning?	
Yes	62.5
No	37.7

Didactic areas of teaching during residency are outlined in Tables 1 and 2. Most of the subjects declared that, the time for didactic teaching should be increased in nearly all subspecialty fields. It seems that the quantity of theoretical courses for residents in various subspecialties, particularly in explanation of imaging techniques, deserves more attention. Orbiscan and topography and other imaging techniques in anterior surface, perimetry and GDX in glaucoma, fluorescein angiography

and OCT in retina, and CT-scan and MRI in the field of orbit, plastic and reconstructive surgery required special considerations. Subjects were asked about total number of surgical procedures they had performed. Mean number of various surgeries or procedures performed by each subject in each field are shown in Table 5. These data were taken only from forth year residents (during graduation) and graduates.

**Table 5.** Mean of self-reported surgical volume experienced during residency training based on their logbooks

Type of surgery	Mean volume
Cornea	
Phacoemulsification	485
ECCE	50
Petrygium	28
YAG- capsulotomy	45
Retina	
Scleral buckling	12
Pan retinal photocoagulation	18
Plastic	
DCR	120
Enucleation	38
Cosmetic surgeries	7
Eyelid surgeries	67
Strabismus surgeries	50
Trabeculectomy	29
YAG-PI	32
Repair of full thickness corneal laceration	85
Contact lens prescription	5

## Discussion

Practicing ophthalmology these days, with the current extent of rapidly growing knowledge and technology, tackle with numerous challenging issues. Residency training programs are supposed to transfer a large trunk of basic knowledge with its rapidly growing branches and newly advanced surgical techniques to trainees, besides developing new methods to improve teaching and to estimate educational outcomes.

In the present study, we evaluated residents' self-assessment of their competency in achieving several key objectives to identify drawbacks of the current Iranian ophthalmology residency training system. In general, residents participating in the study, declared a high level of satisfaction with their training programs. Many of the subjects requested for additional clinical practice; in fields of refraction, contact lens prescription and imaging techniques (Table 2). In subspecialty fields like cornea and refraction, it seems better to expend more time, or at least it is better to schedule more time for some residents if they think they have insufficient experience in these certain fields, as majority of cases (82.5%) thought it is mandatory (Table 4). In the field of surgical skills, more practice was demanded in the areas of cosmetic and plastic surgery, and vitreoretinal surgeries.

These results are similar to results of McDonnell et al<sup>1</sup> and Zhou et al<sup>2</sup> who found

that training in clinical and refractive surgical conditions was inadequate in residency programs across the United States and Canada, respectively. It is important for residency programmers to update their curriculum to ensure that residents obtain adequate exposure to this increasingly popular area of the refractive field, in the aspect of optical or surgical management. On the other side, presence of many optometrists in this hospital that perform refraction and optical management of refractive errors such as prescription of glasses and contact lenses as their formal duty, makes residents inactive and uninvolved in these fields.

Insufficient exposure in some areas of surgical skills, like cosmetic plastic surgery and vitreoretinal surgeries was declared. Although, most of the vitreoretinal surgeries are sub special and considered for fellowship curriculum, acquiring some of the surgical skills in these fields are mandatory for an ophthalmology resident. It is better for programmers to include some surgical training techniques, utilizing virtual reality simulators for the residents. The efficacy of these programs in ophthalmic surgical training has been documented in several studies.<sup>3-5</sup>

Surgical capacities in Farabi Eye Hospital were assessed to be adequate in all fields (Table 5). Some countries has developed a minimum benchmark of case volumes that residents must achieve in order to obtain

certification,<sup>6</sup> although mean number of surgeries in our residents are higher than those reported by many programs in the United Kingdom and the United States, the length of our training varies from these countries<sup>7,8</sup>; also since each individual resident will require different volumes of surgical practices to reach an acceptable competency, it may be difficult to set a "minimum level" required for graduation. However, it is important to set such standards, as it has been previously confirmed that, for example for phacoemulsification, complication rates significantly reduced after residents had completed 80 cases or more.<sup>9</sup>

Although many subjects reported high number of surgeries that they do in their programs, but there is some reports that they are not satisfied and ask to pay more time in some fields (Table 3).

Regarding the didactic teaching programs (Tables 1, 2); it seems that there are some works to be done. Overall, ophthalmology residency training centers are tertiary referral centers with plenty of patients with challenging issues that need much more time at clinics and operating rooms for diagnostic work ups, therapeutic planning and surgical interventions; So, in the rapidly growing bulk of the technology-dependent ophthalmology knowledge, comprehensive theoretical courses concurrent with detailed techniques of application of paraclinical equipments, mandates more consideration and time expenditure. It is notable that ungraduated subjects announced more dissatisfaction from their training programs, whereas graduated subjects were more pleased with their knowledge and skills; including ungraduated subjects in this study can cause a bias, because self-belief of being capable in diverse ophthalmology practice skills, may progress when the residents finish the very last stages of their training period and deal with the actual demands of their independent ophthalmology practice.

One of the potential limitations of our study was that the correlation between self-reported perception and measurable competency is undetermined. Nonetheless, our data suggest that opportunities exist to help young ophthalmologists to prepare them more appropriately to begin their self-relied practice course in private. Supporting the findings of

our study, are the results of a single ophthalmology department's survey of its graduates,<sup>10</sup> perception of recent ophthalmology residency graduates,<sup>1</sup> and a smaller national survey of otolaryngology residency graduates.<sup>11</sup>

## Conclusion

Residents in Farabi Eye Hospital retain a high level of satisfaction in achieving many of the key competencies for practice. Modification of current curricula can improve the educational experiences of our residents and can ensure that newly graduated residents attain sufficient self-assurance and confidence in the skills required to function as effective, up-to-date ophthalmologists.

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