

A Study on the Advanced Ophthalmic Training Program of Bangladesh

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Abstract

Aims: To describe the present status, strength, and weakness of the advanced ophthalmic training program in Bangladesh. **Methods:** A prospective study was carried out among the ophthalmologists those who had completed their long-term advanced ophthalmic training program (fellowship) in five tertiary eye hospitals of Bangladesh. The study period was from 01 January 2020 to 30 June 2020 including first three months data collection period. A semi-structured questionnaire was supplied to the study subjects. The analysis was made based on the answer from the study subjects. **Results:** The total responder was 46. The male responder was 58.7%, where the mean age of the study subjects was 33.05 years when they entered the training program. The Vitreo-retina fellows were the highest at 30.4%. Most of the fellows performed as the primary surgeon without supervision rather than surgery with supervision. Satisfied with the mentor was 91% while satisfied with hands-on work was 85% and satisfied with academic activities was 69.6%. About 21.7% of fellows did not involve any research work during the fellowship period. About 67.4% of fellows said that the central scientific session could be rearranged twice a week. However, 37% of fellows did not fulfill their logbook in the fellowship period. **Conclusion:** Most of trainees had got the opportunity to do hands on work but the supervision was inadequate. The research activities were not satisfactory in the advanced training period. There was not any unique training/fellowship curriculum among all institutes.

Keywords: Bangladesh, postgraduate, advanced, training, Ophthalmology.

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Introduction

The advanced post graduate ophthalmic training Program (Fellowship program) follows certification in a subspecialty and focuses on the advanced clinical and academic skills¹. The focus of fellowship training is categorized into three distinct types: individualized, research or clinical. Individualized fellowships are arranged in response to the individual career goals of the trainee and/or the recruitment goals of the division. These fellowships are often associated with enrollment in a graduate degree program. The duration of this training was typically linked to that of the degree program, usually 2-3 years. Research Fellowship programs focused on research are defined by their sustained programmatic approach to research. The fellowships could also be linked to the attainment or refinement of clinical skills, but the clinical aspects were not the main focus of activity. Clinical fellowships are most fellowship programs focused on the attaining clinical expertise over and above the competencies of specialty or subspecialty residency, usually in a distinct clinical area. The duration is generally

one year, but some extended to 2 years. These trainees were supervised in the clinical environment, as appropriate to the development of new skills. Research is not a major focus of most of these programs and, when present, was tightly linked to the clinical focus. These programs were usually focused on a specific pattern of disease entity (e.g., Glaucoma, Cataract etc.), or treatment modality (e.g., interventional cardiology, renal transplantation, Refractive surgery). The faculty members are helping to develop the fellows, in providing a clinical service, surgeries quality and help in research work to write papers. Division heads and fellowship directors expressed the importance of being able to train individuals beyond the skills learnt in specialty and subspecialty programs, identifying unique patient populations in need of these skills and/or new or emerging advances and treatments in their field. For trainees, additional expertise led to added confidence in the clinical realm and provided new opportunities for future clinical practice.¹⁻⁴ The mentor and faculty will view their fellows to spread their influence by giving a beneficial training experience to individuals who would establish a practice in other regions or countries. Trainees will perceive that the fellowship would enhance their reputation through their development of clinical skills, attitude, and research activities. Bangladesh College of Physicians and Surgeons (BCPS) maintain a fellowship program after passing MBBS. Bangladesh is a beautiful country in Southeast Asia with 170 million people. About sixty thousand doctors are working in Bangladesh. Among them, only 1100 ophthalmologists provide eye care services to people. Most Ophthalmologists (95%) stay in urban areas, but most people live in rural areas according to Ophthalmological Society of Bangladesh directory. It is vital to develop skilled ophthalmologists through a subspecialty fellowship program to provide quality services to the people. The advanced postgraduate ophthalmic fellows are expected to bring the acquired knowledge, skills and take part in programs to preserve vision and prevent blindness. In the Ophthalmic arena, A total of five tertiary eye Institutes and Hospitals include

National institute of Ophthalmology, Ispahani Islamia Eye Institute and Hospital, Chittagong Eye Infirmary and Training Complex, Bangladesh Eye Hospital and Institute, and Vision Eye Hospital in Bangladesh, are currently maintaining the postgraduate training program (Sub-Specialty fellowship program) after passing a post-graduation degree like Diploma in Ophthalmology, MS (Ophthalmology, FCPS (Ophthalmology) in Bangladesh. We aimed to explore the postgraduate training program (fellowship program) of Ophthalmology in Bangladesh, examine the institute's strengths and pitfalls, and plan the future development of fellowship education.

Methods

A Prospective cross-sectional study was carried out from 01 January to 30 June 2020 among the ophthalmologists who completed at least one-year long term fellowship program in any institute or hospital of Bangladesh. During the study period, we found only five institutes/hospitals including National institute of ophthalmology, Ispahani Islamia Eye Institute and Hospital, Chittagong Eye Infirmary and Training Complex, Bangladesh Eye Hospital and Institute, and Vision Eye Hospital in Bangladesh, which were providing the fellowship program. We interviewed fellows by closed and open questionnaire to examine the status of the fellowship program in Dhaka, Bangladesh. A total of 174 national and international ophthalmologists had completed their long-term fellowship from the five tertiary eye hospitals of Bangladesh from 2003 to 2018 (Table-1). Descriptive statistics were used to depict the prevailing status of fellowship training. Every institute/hospital follows had its own rule to run the fellowship program. In public institutes or hospitals, 50% of fellows are usually recruited from the government service holder. The eligible criteria for the fellowship program include a postgraduate ophthalmologist, examination based 100 marks MCQ based questions and a face-to-face interview by the board. A process of data collection, analysis, and conclusions was performed to analyze the quantitative data.

Table 1: Distribution of the total no. of fellows with the starting year of Fellowship Program

Institute/Hospital	Starting Year	No. of Fellows (2018)	
		Short Term	Long Term
National Institute of Ophthalmology	2014	22	36
Ispahani Islamia Eye Institute & Hospital	2006	10	86
Chittagong Eye Infirmary & Training Complex	2003	49	37
Bangladesh Eye Hospital & Institute	2015	03	14
Vision Eye Hospital	2017	00	01
Total- 05		84	174

Results

We evaluated forty-six (46) postgraduate ophthalmic fellows of 174 completed long term fellows, during the study period. Among them, 27 (58.7%) were male and 19 (41.3%) were female. In this study, 50% of study subjects were in the age group 31 to 35 years of age. About 63% of male were below 35 years in compared to 58% female above in 35 years of age. The minimum age of the study subjects was 30 years, the maximum age was 47 years, and the mean age was 33.05 years. The distribution of fellowship trainees was in the subspecialty of cataract (13%), cornea and anterior segment (15.2%), Glaucoma (17.4%), Vitreo-Retina (30.4%), Orbit and Oculoplasty (13%), and Pediatric Ophthalmology (11%). The distribution of performed surgeries was categorized into groups like 1 to 50, 51 to 100, 101 to 150, 151 to 200 and >200. The individual fellows had participated for the individual surgery either as observer/associate surgeon, or he did the surgery as primary surgeon or performed the surgery under supervision. Less than 50 surgeries were performed by 37% fellows, 51-100 surgeries were performed by 24% fellows, 101 to 150 surgeries by 19.6% fellows, 151 to 200 surgeries were performed by 6.5% fellows, and more than 200 surgeries were performed by 13% fellow during their fellowship program as primary surgeon. 21.7% fellows were delighted with their

mentors; satisfied was 69.6% and 8.7% fellows were dissatisfied with their mentors. About 39 (85%) fellows were happy with hands-on work, 40 (87%) satisfied with the working environment, 32 (69.6%) fellows were satisfied with Academic Activities in the hospitals, and 41 (89%) satisfied with their fellowship period. A total of 34 (74%) of fellows were satisfied, and 12 (26%) of fellows were dissatisfied with their clinical activities in the department. About 21.7% of fellows were not involved in any research work, 54.3% of fellows wrote only one research paper during their training time, and 24% wrote 2-3 research papers. About 65% of fellows were satisfied with the morning central scientific session on all working days. Most fellows (67.4%) believed that central scientific session should be done twice weekly, and departmental clinical discussion might be done in other working days. Among the study subjects, 29 (63%) filled their logbook and 37% did not fulfill any log during the training program. The fellowship duration was generally 12 months, but some extended to 18 months. These trainees were supervised in the clinical department to develop new skills, but the overall supervision was minimal. Research was not a major feature and, they were tightly linked to the clinical focuses on a specific disease entity or treatment modality (Table-2).

Table-2: Distribution of the status of demographic profile and training program

Variables	No. of Fellows	Percentage
Gender		
Male	27	58.7
Female	19	41.3
Age group (years)		
26-30	01	02.2
31-35	24	52.2
36-40	15	32.6
41-45	03	06.5
46-50	03	06.5
Subspecialty		
Cataract	06	13.0
Cornea & Ant. Segment	07	15.2
Glaucoma	08	17.4
Vitreo-Retina	14	30.4
Oculoplasty & Orbit	06	13.0
Pediatric Ophthalmology	05	11.0
Satisfied in Clinical Activities	34	74.0
Satisfied in in working Environment	40	87.0
Satisfied on Hands-on Work	39	85.0
Satisfied on Fellowship duration	41	89.0
Satisfied on Mentors	42	91.0
Satisfied with Academic Activities	32	70.0
Satisfied on Daily Central Scientific Session	27	64.0
Filled the Log Book	29	63.0
Performed surgeries >50		
As Observer	33	72.0
As Associate surgeon	28	61.0
As a Surgeon under supervision	13	28.0
As Primary Surgeon	29	63.0
No. of Research activities		
None (0)	10	22.0
1-2	34	74.0

We observed the following strengths and pitfalls on fellowship/advanced postgraduate training program and also observed physically all the five eye institutes.

The strengths of the fellowship program:

- The well-equipped tertiary-based hospitals
- Available skillful faculties/mentors
- Daily central scientific session
- Good academic activities
- Harmony working environment
- Patients availability
- Wide variety of clinical exposure
- Tremendous opportunity to do a good number of Hands-on works

The pitfalls of the fellowship program:

- There is no unique structured format in Bangladesh
- Mentor could not give enough time to fellows
- Fellows give not much time for the study
- Lack of personalized care
- Too much workload, hence academic aspect being neglected
- Most of the mentors have no long-term fellowship experience
- Lack of opportunity/interest to do research activities
- Lack / Improper documentation
- All departments could not maintain the logbook
- Lack of clinical discussion in the department
- Overburden of central scientific session

Discussion

Post graduation fellowship program is helping to increase surgical confidence and provide opportunity to complete academic work.⁵ Postgraduate advanced training program or postgraduate fellowship program is the training based clinical education program recognized as critical factors influencing the reach, range, and quality of eye health service delivery. Therefore, the Institutes/hospitals are trying to provide the highest quality of training and education through the committed faculty complemented by the most advanced technological and methodological tools. This study describes the strength and pitfalls of fellowship programs across various subspecialty departments of five tertiary based

eye hospitals of Bangladesh. The total responder was forty-six. The male responder was little bit higher than female responder in this study. The average age of the study subjects was above 30 years for the entrance of the fellowship program that should be below the age 30 years. Of all responder fellows, the Vitreo-retina fellows were the highest in occurrence in our study. Most of the fellows performed as the principal surgeon without supervision rather than surgery with care, and as an assistant surgeon. Most responders (91%) were satisfied on their mentor/guide and dissatisfied was account only 09% during the training program. Most trainees (85%) were satisfied with hands-on work. They performed surgeries without any supervision in maximum time. Training should be supervised. Met with academic activities was 69.6%. Studies reported the outcome of the fellowship training program was the positive perceptions of the benefit of fellowship on an individual's clinical expertise and academic productivity. After fellowship program, it is reported to provide higher quality care, performing better than previous professional work, and better outcomes in a variety of functional and quality of life scores after surgeries.^{6,7} Six (43%) Vitreo-retina fellows, and 25% of glaucoma fellows were dissatisfied on clinical activities. About one-fifth of fellows did not involve any research work during the fellowship period. The Vitreo Retinal Society of India (VRSI) surveyed on the young retina surgeons to get a sense of the prevailing mood among them about fellowship programs in India; approximately 20% of fellows had performed less than ten vitreo-retinal surgeries in their fellowship period, although more than 30% had performed more than 100 vitreo-retinal surgeries. More than 25% of study subjects had not done any case of diabetic vitreo-retinal, internal limiting membrane (ILM) peeling, or epiretinal membrane peeling during their fellowship times. More than one-third were not confident of doing surgeries independently immediately after their fellowship and understood that their programs needed restructuring.⁸ One survey was conducted on the USA surgical retina fellowships with fifty-two respondents where large variation in surgical volume was observed but reported that most

fellows achieved the minimum number of 100 PPV as primary surgeon.⁹ About 2/3rd fellows preferred the central scientific session twice a week. About 37% of fellows did not fulfill their logbook in the fellowship period. All fellows reported that they developed their clinical and surgical skills after completing the fellowship program. In the United Kingdom, ophthalmic training is well structured with a curriculum containing minimum competencies in a range of practical and surgical skills that must be achieved. S/he can communicate effectively with a patient and other personnel in that patient's care and practice with appropriate attitudes and ethics.¹⁰

Limitations of the study included the breadth and number of study subjects (fellows). However, although small, the fellows represented a range of programs, a range of duration of the training, and male and female gender. Published literature described the educational aspects of fellowship training; articles provide information on clinical and procedural volumes as a description of the resources available for clinical training, but there is little information regarding objectives, curriculum, or assessment methods. Educational material, and administrative policies and procedures may be a source of information on the status of fellowship training.¹¹⁻¹³ Clear categorization and explicit statement of purpose of fellowship training facilitate further research and further development of clinical and surgical care of professional development. The quality and structure of the postgraduate fellowship programs of Bangladesh are pretty varied from hospitals to hospitals and also depends on mentor's experiences.

Conclusion

In Bangladesh, the facility of hands-on work is good for postgraduate advanced ophthalmic trainees due to huge number of patients and work load in the tertiary eye hospitals, but the supervised training is not a satisfactory level. Research activities is also not at a standard level. All tertiary eye care institutes/hospitals of Bangladesh should follow a unique structured format using potential skillful resources. Ophthalmological Society of Bangladesh (OSB) can formulate a structured framework for fellowship training for Bangladeshi ophthalmologists to follow a same standard training program. "Imagination is more important than knowledge," Einstein once said. We must encourage the next generation of ophthalmologists for the challenges ahead.

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Data Availability Statement

Data are available upon request which can be directed to the corresponding author.

Conflict of Interest Statement

The authors declare no potential conflicts of interest.

Author Contributions

SMK, MSI- designed the research study, procured the samples and performed the experiments, interpreted the results, SMK, MAKKA, MEI, -designed and performed the statistical analyses; SS, MSN- provided critical input; SMK, MTR, MSI -wrote the first draft of the manuscript with information from all co-authors; SMK, MAKKA, MS, MTR- critical appraisal of the manuscript; All authors reviewed and approved the final version of the manuscript before submission.

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