

Status of sub-specialization among practising ophthalmologists in Eastern Africa

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ABSTRACT

Objective: To establish the status of sub-specialization among practicing ophthalmologists in the Eastern Africa region.

Design: This was a cross-sectional study.

Method: An analysis of data obtained from 65 practising ophthalmologists from six universities/teaching hospitals in three countries within Eastern Africa.

Results: About a third (32%) of the practising ophthalmologists had sub-specialized while the rest (68%) had not sub-specialized. Glaucoma had the highest number of sub-specialists while neuro-ophthalmology, uveitis and ophthalmic pathology/tumour had none. About two-thirds (65.9%) of ophthalmologists who had not sub-specialized indicated willingness to specialize subject to availability of opportunity and funding. Vitro-retinal surgery and anterior segment being the most preferred sub-specialties. India was cited as the main sub-specialization destination due to availability of sufficient hands-on training opportunities. The main barriers to sub-specialization cited were lack of sufficient funding and inadequate opportunities for sub-specialization. Lack of support in terms of equipment was seen as a major post-training challenge.

Conclusion: Majority of practising ophthalmologists had not sub-specialized mainly due to lack of sufficient opportunities and funding. Although glaucoma is the area with many sub-specialists, vitreoretinal surgery and anterior segment are emerging as the main preferred specialty area among ophthalmologists who had not sub-specialized. Consequently, sustainable and demand driven funding and training opportunities for sub-specialization needs to be provided as a mechanism of raising sub-specialization profiles within the regions.

INTRODUCTION

The incidence of eye related diseases and complications requiring sub-specialist to handle has increased dramatically in sub-Saharan African countries and so have their serious complications¹⁻⁵. Evidence indicates that most of these diseases could be managed and complications be avoided by providing better and early specialized care at the service delivery point⁶⁻⁸. Despite this alarming trend, eye care problems have continued to receive little attention especially in sub-Saharan Africa. Further, sub-Saharan African countries continue to experience high shortages of eye care sub-specialists as well as general eye care staff^{9,10}.

In relation to sub-specialization, literature reviews have indicated that the status of sub-specialization remains undocumented especially within the region. Further, a study by Gilbert⁴ and Haroon⁹ indicated that the region continues to suffer from shortage of qualified mid level cadres for eye care. For instance, all the regional countries have less than 300 general ophthalmologists per 10,000 populations which make it difficult to adequately meet eye care services needs and demands of the population. According to previous studies and documentations, many of the eye health cases emerging now are those that increasingly require sub-specialised skills to address such as eye care cases related to diabetes, cancer and other non-communicable diseases^{8,12}. This underpins the need to increase the profile of sub-specializations available to

handle the increasing burden of eye diseases and problem at both the national and regional level.

Currently, evidence on the status of sub-specialization, sub-specialization preferences and barriers to sub-specialization in ophthalmology is lacking at the regional level. As a result, this study aimed at obtaining reliable information on the status of sub-specialization among practising ophthalmologists in Eastern African region and understand barriers to sub-specialization in ophthalmology so as to form a base for effective and efficient program intervention and policy approach for raising the profile of sub-specialization in the region.

MATERIALS AND METHODS

This study used a cross-sectional study design. Data was collected using a pre-tested online questionnaire to ensure that all the practising ophthalmologists across the region were capable of participating in the study so as to provide their insights, views and opinions on the preferences and barriers to sub-specialization. The main focus of the study was in three countries; Kenya, Uganda and Tanzania. Census approach was used to select study respondents using a sampling frame of all practicing ophthalmologists in the register of EACO as at the time of the study. Faculty members selected from universities and hospitals teaching ophthalmology participated in the study namely; MUST, Makerere, CCBRT, KCMC, Muhimbili and UON. A total of 65 practising respondents

participated in the study. Data from the online survey was coded, entered in a data screen, cleaned and analysed using SPSS version 20. Descriptive statistics were used to analyse the data with a special focus on the objectives of the study.

RESULTS

A total of 65 practising ophthalmologists participated in the study. Out of the 65 practising ophthalmologists, only 21(32%) had sub-specialized while 44 (68%) had not yet sub-specialized (Figure 1). However, of the 44 who had not sub-specialized, most of them 29 (65.9%) were willing to sub-specialize (Figure 2).

Figure 1: Status of sub-specialization

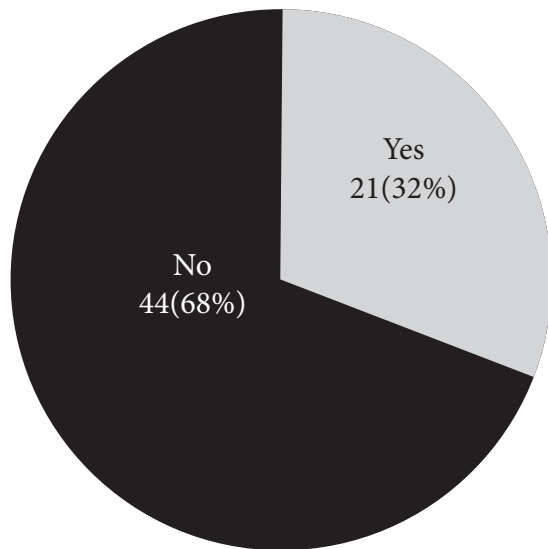
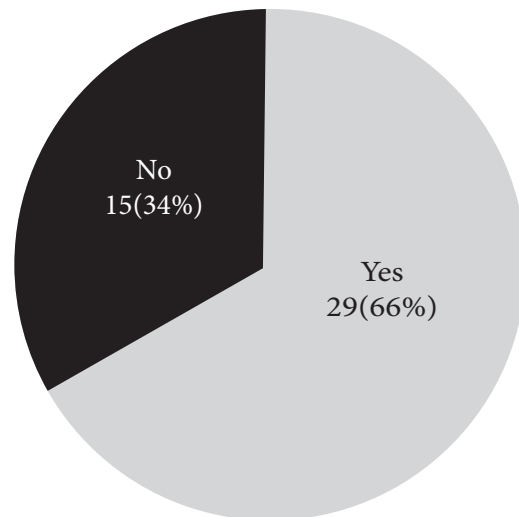


Figure 2: Willingness of non sub-specialized ophthalmologists to sub-specialize



In relation to sub-specialty areas and preferences for sub-specialization, of the 21 who had sub-specialized; majority of them had sub-specialized in glaucoma (30%), followed by paediatric ophthalmology, community eye health and vitreo-retina. However, none of them had sub-specialized in neuro-ophthalmology, uveitis and ophthalmic pathology. On the other hand, of the 29 practising ophthalmologists who were willing to sub-specialize in future; majority of them preferred sub-specializing in vitreo-retina surgery (43.3%) followed by anterior segment, paediatric ophthalmology and cornea respectively (Table 1).

In terms of reasons for sub-specialization, the main reason for choice of sub-specialty among those who had sub-specialized and those who had not sub-specialized but were willing to sub-specialize was existence of need/demand for the sub-specialty services followed by personal interest in the sub-specialty (Table 2).

Table 1: Status of sub-specialization and sub-specialization preferences

Sub-specialties	Sub-specialty areas among sub-specialized ophthalmologists		Sub-specialization preferences among non sub-specialized ophthalmologists	
	No. of responses	(%)	No. of responses	(%)
Glaucoma	8	30	0	0.0
Paediatric ophthalmology	4	15	0	0.0
Community eye health	4	15	0	0.0
Vitreo-retina surgery	4	15	13	43.3
Cornea	2	7	3	10.0
Anterior segment	2	7	9	30.0
Epidemiology and biostatistics	2	7	0	0.0
Oculoplastics	1	4	0	0.0
Neuro-ophthalmology	0	0	0	0.0
Uveitis	0	0	0	0.0
Ophthalmic pathology	0	0	5	16.7
Total	27	100	30	100

Table 2: Reasons for sub-specialization

Reasons	Sub-specialized ophthalmologists		Non sub-specialized ophthalmologists	
	No. of responses	(%)	No. of responses	(%)
Specialty within area of interest	9	43	10	29
High need/demand for sub-specialty	10	48	14	41
Very few specialist in this area and in the region	0	0	9	26
We have equipment	0	0	1	3
Availability of opportunity/chance	2	10		
Total	21	100	34	100

In relation to training institutions, Indian training institutions have produced most of the sub-specialists compared to institutions within the region and other overseas training institutions. Additionally, overseas

institutions are the most preferred training institutions among those who had not sub-specialized. The main reason for choice of training institution was availability of opportunities for adequate hands on training (Table 3).

Table 3: Reasons for choice/preference for sub-specialties

Sub-specialized ophthalmologists			Non sub-specialized ophthalmologists		
Reasons for choice of training institution	No. of responses	(%)	Reasons for choice of training institution	No. of responses	(%)
I got hands-on experience	5	33	To get hands on training	14	58.3
Had best training and experienced faculty	3	20	Good for experience	5	16.7
Had what I wanted	3	20	Internationally recognized	2	8.3
Convenience	2	13	Low cost of living/Cheap	3	12.5
Opportunity/ chance	1	7	-	-	-
Research oriented	1	7	-	-	-
Total	15	100	Total	24	100

The main benefit for sub-specialization was identified as acquisition of knowledge and skills (44.4%) and provision of better services to patients (38.9%) (Figure 3). In relation to sub-specialization challenges, lack of sponsorship (42.9%) was the main pre-training challenge cited followed by lack of clear training structures (28.6%). The duration of training was a major concern for those with families as one had to be away (63.6%). Lack of infrastructure and equipment (75%) for practice was most cited post-training challenge (Table 4).

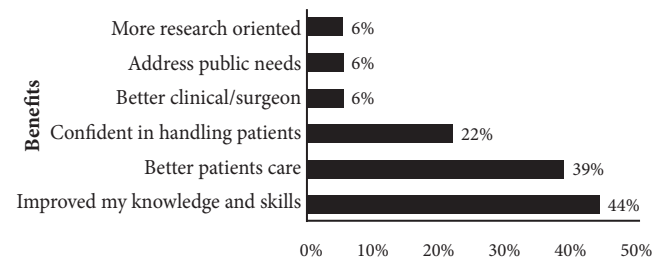
Figure 3: Benefits of sub-specialization

Table 4: Challenges to sub-specialization

Nature of challenge	Challenge	No. of responses	(%)
Pre training challenges	Lack of facilities regionally	1	7.1
	Lack of sponsorships	6	42.9
	No clear training structures	4	28.6
	Difficult of choice of subspecialty	3	21.4
In training challenges	Away from home for a long time	7	63.6
	Problems with subsistence	1	9.1
	Lack of Aid	1	9.1
	Difficult in adjusting	1	9.1
	Language barriers	1	9.1
Post training challenges	Lack of infrastructure and equipment	2	75
	Lack of refresher program	2	25

DISCUSSION

Despite the escalating incidence and complications of eye health conditions requiring ophthalmology sub-specialists in the region^{3,4,13,14}, this region continues to suffer serious setbacks in terms of available eye care human resources capable of appropriately responding to these needs. Although past studies have shown that many of the eye care diseases could be managed and complications be avoided by better and early clinical care at specialized level^{6,8,15} the low rate of sub-specialization among practising ophthalmologists continues to pose a major challenge in the achievement of the Vision 2020. This is supported further by the finding that majority of the ophthalmologists have not yet sub-specialized. Additionally, majority of the practising ophthalmologists have sub-specialized in areas with high demand for sub-specialized care. The preferences for those who have not sub-specialized are also driven by demand¹⁶ of the services sought. This situation has left a number of the sub-specialties such as neuro-ophthalmology, uveitis and ophthalmic pathology with few or no sub-specialists. This sub-specialization trend does not augur well for eye care conditions requiring such sub-specialists. The poor and vulnerable populations are most affected by this situation due to health access barriers and inequalities in accessing sub-specialized eye care¹³. This calls for concerted efforts aimed at improving quality and access to sub-specialized care. This requires increased advocacy and resource mobilization for supporting training of more sub-specialists in sub-specialties with increasing demands and as well as provision of incentives for sub-specialization in sub-specialties with low sub-specialization profiles such as providing them with basic infrastructure and equipment for practice.

Sub-specialization has been linked to acquisition of better skills and knowledge for improved patient care and improved patients outcomes^{17,18}. However, most of the training institutions in the region cite lack of technical capacity to offer sub-specialized training. Hands-on

training and learning experiences constitutes the single most incentive for choice of a training institution. As a result, majority of sub-specialists have trained or preferred future training in institutions in India due to better opportunities for hand-on training and learning experiences.

The desire to sub-specialize has been greatly limited by lack of sufficient funding, sub-specialization opportunities and lengthy training period away from home. Additionally, the regional institutions and service delivery facilities lack adequate infrastructural capacity to support sub-specialized service delivery after training. This has created disincentive for sub-specialization among the practicing ophthalmologists. A more in-depth appraisal of regional training institutions indicated that the regional institutions lack appropriate infrastructure/facilities for offering most of the sub-specialties^{10,19,20}. Further, the region doesn't have an effective and efficient coordinated strategy for supporting the sub-specialist after training. This has contributed greatly to low production of sub-specialists regionally. Therefore, improving the technical and infrastructural capacity of regional training institutions and service delivery facilities can play a key role in raising the profiles of ophthalmologists in the region^{5,10,19,20}.

CONCLUSIONS

There are very few ophthalmology sub-specialists to meet the increasing demand for sub-specialized eye care services, as most of the practicing ophthalmologists have not sub-specialized. Although glaucoma is the area with most sub-specialists, vitreoretinal surgery and anterior segment are emerging as the main preferred specialization areas among practicing ophthalmologists who have not specialized, due to increased demand for such sub-specialized services. Therefore, mechanisms to increase funding opportunities and support trainees to acquire equipment after training are recommended as incentives for increasing sub-specialization in the

Eastern Africa region. Further, the region should establish regional training centres of excellence with adequate infrastructural and instructional support to deliver hands-on training.

LIMITATIONS OF THE STUDY

There was limited publication on sub-specialization and their preferences to provide a strong background of the study and base the discussions of the findings. Although this review found some articles about eye health in Africa, they were not focused on sub-specialization in ophthalmology but rather general eye health situation. However, the information provided important inputs and insight in the study.

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