

# Survey of the Surgical Practice of Eye Surgeons and Trainees in Tanzania

Samantha X. Xing B.A., Nivedita Ravi B.A., Anold Ndyamkama M.D., Andres Serrano M.D., Shukuru Mtenga M.A., Lisa Park M.D.

Research Question: What is the surgical practice and interest in learning phacoemulsification among Tanzanian eye surgeons and trainees?

## BACKGROUND

Cataract is the leading contributor of blindness and visual impairment in Sub-Saharan Africa<sup>1</sup>. As of 2016, there were 55 ophthalmologists and 81 assistant medical officers in ophthalmology (AMO-O) in Tanzania<sup>2</sup>. Phacoemulsification cataract extraction (phaco) and manual small incision cataract surgery (MSICS) are both safe and effective procedures for cataract patients. Studies have shown that patients who undergo phaco tend to achieve better uncorrected visual acuity and have lesser levels of surgically induced astigmatism in comparison to those who undergo manual surgery.<sup>3</sup>

## DESCRIPTION OF ORGANIZATION

Vision Care USA is an international NGO dedicated to offering ophthalmic care through surgical eye camps and school vision screenings to people residing in underserved regions. Vision Care also organizes a Phaco Training Course (PTC) dedicated to teaching local ophthalmologists modern surgical techniques. This program has been held in Ethiopia since 2012 and has been recently initiated in Tanzania. Our study focuses on evaluating the current level of surgical practice and interest in learning phacoemulsification among Tanzanian eye surgeons and trainees.

## TABLES

Gender, n (%)	
Male	14 (74)*
Female	5 (26)
Age Range, n (%)	
30-39	9 (47)*
40-49	7 (37)
50-59	2 (11)
60-69	1 (5)
Years in Practice, mean (SD)	8 (8)
Setting of Practice, n (%)	
Urban	13 (68)*
Rural	4 (21)
Place of Ophthalmology Training, n (%)	
MUHAS	11 (58)*
KCMC	6 (32)
Performing Cataract Surgery, n (%)	
Manual Surgery	19 (100)
ECCE	5 (26)
MSICS	18 (95)
Phacoemulsification	4 (21)
Manual Surgery Performed/Year, mean (SD)	188 (219)
Materials Used, n (%)	
Intraocular Lenses	19 (100)
PMMA	19 (100)
Foldable	6 (32)
Viscoelastic	19 (100)
% of cases an IOL is implanted, mean (SD)	89 (20)
% of cases the correct IOL is available, mean (SD)	84 (14)
Mode of After-Surgery Care, n (%)	
Ambulatory	11 (58)
In-Patient	6 (32)

\* Indicates that most participants fall into this category

Gender, n (%)	
Male	10 (39)
Female	15 (58)*
Age Range, n (%)	
18-29	7 (27)
30-39	17 (65)*
40-49	1 (4)
Place of Ophthalmology Training, n (%)	
MUHAS	26 (100)
Year of Training, n (%)	
1	8 (31)
2	11 (42)*
3	7 (27)
Currently Performing Cataract Surgery, n (%)	
Yes	19 (73)*
No	7 (27)
Manual Surgeries/Year, Mean (SD)	26 (28)

Interested in learning phaco surgery, n (%)	
Interested	33 (83)
Barriers to performing phaco surgery, n (%)	
Access to Materials (IOLs, viscoelastic)	20 (50)
Access to Machines	23 (58)
Material and Machine Costs	21 (53)
Cost of Training	16 (40)
Other (fill-in):	
mentorship	
poverty	
availability of biometry	
availability of patients	
high cost of surgery to patients	
lack of insurance coverage	

Age range of most patients, n (%)	
Less than 50	1 (2)
50-59	1 (2)
60-69	13 (29)
70-79	15 (33)*
80+	2 (4)
% of patients who are women, mean (SD)	48 (16)
Patient's Income Level, n (%)	
Below Average	20 (44)*
Average	16 (36)
Above Average	0 (0)

Particpant #	Gender	Age	Job Title	Average performed/year	Machine Used	Performed /career	Location of learning phaco	Confidence in performing phaco
2	Male	40-49	Ophthalmologist	<50	Appasamy	<100	KCMC Bugando	Slightly confident
10	Female	40-49	Ophthalmologist	2	Borrowed	7	India	Not at all confident
12	Male	50-59	AMO-O	400-500	n/a	3000	Arasan Eye Hospital	Quite confident
14	Male	40-49	Ophthalmologist	1-2	Oertli CataRhex	3 1500	KCMC	Quite confident
15	Male	30-39	Ophthalmologist	n/a	n/a	15	by an expat	Slightly confident

## METHODS

Self-administered questionnaires were distributed to all attendees at the 2023 Tanzanian Ophthalmology Society 4<sup>th</sup> Eye Health Workers Congress. Data on demographics, surgical practice, use of materials such as viscoelastic and intraocular lenses and interest in and barriers to learning phaco were collected. Optometrists, optometric nurses, and other allied health personnel were excluded from the study. Descriptive statistics were computed using Microsoft Excel.

There is a strong desire among Tanzanian eye surgeons and trainees to learn phaco. Targeted training programs addressing cost, insurance and resource constraints can enhance the adoption of phaco.

## DISCUSSION

All eye surgeons who participated in our survey conduct cataract surgery, specifically using manual techniques and only a small number have acquired skills in phaco and are actively using the technique. Currently, phaco is not taught or practiced by residents. Both Tanzanian eye surgeons and residents express interest in acquiring phacoemulsification skills. Unfortunately, due to a lack of insurance coverage and the high expenses associated with phaco, there is a scarcity of patients available for this procedure, presenting a significant obstacle to learning and performing phaco. Implementing targeted training programs must consider various barriers, such as costs and accessibility to machines and essential materials like intraocular lenses and viscoelastic. Addressing these challenges will be crucial to enhancing the availability of advanced cataract surgical techniques and improving visual outcomes for patients in Tanzania.

## REFERENCES

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