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## Evaluation of Ophthalmic Technicians, Refractive Service Providers in Mozambique

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# Evaluation of Ophthalmic Technicians - providers of refractive services in Mozambique

Kajal Shah  
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Supervisors: Dr James Loughman, Prof Kovin Naidoo  
Funding: World Council of Optometry Fellowship  
Mozambique Eye care Project

# Background

- 314 million people worldwide live with low vision and blindness<sup>1</sup>. 145 million people's low vision is due to uncorrected refractive errors (URE)
- Mozambique has an estimated 720,000 people with visual defects<sup>2</sup>.
- Visual impairment and blindness from URE is estimated at 156,000<sup>3</sup>
- Mozambique is failing to meet the WHO recommended Vision 2020 ratio of eye care personnel and to head of population<sup>4</sup>
- The Mozambique Eyecare Project (MEP) is training Mozambique's first professional optometrists providing a sustainable and comprehensive eye-care system integrated with the national health system<sup>5</sup>

1. Vision 2020: Right to Sight 2005

2. Yolanda Zambujo. A Situação Assistencial Oftalmológica Moçambicana *Oftalmologia* 2010- Vol. 34: pp. 417 – 419

3. Resnikoff, S. Pascolini, D. Mariotti, S. P. & Gopal, P. P. Global Magnitude of Visual Impairment caused by

4. Uncorrected refractive errors in 2004, *Bulletin of the WHO*, 2008, 86 (1), 63 – 70 Vision 2020 The Right to Sight – Global initiative for the elimination of avoidable blindness – Action plan 2006 – 2011.

5. Naidoo KS. Towards a new model in training and delivery of Optometric education. *Optometric Education* 2000: volume 25, Number 2:59-61.

# Eyecare Pathway of patients in Inhambane, Mozambique<sup>2</sup>

Ophthalmologist in Hospital Central of Maputo HCM



OCO in HPI



OCO in HRC/ HRV



Nurse in Health Centre (Triage)



ACS and traditional medicine practitioner in the community;  
Teachers in schools (education on prevention)

<sup>2</sup> A Situação Assistencial Oftalmológica Moçambicana Yolanda Zambujo Oftalmologia - Vol. 34: pp. 417 – 419



## Aim of the research

- Evaluate refraction skills and competencies of Ophthalmic Technicians (OCO) who along with ophthalmologists are the only personnel trained in refraction within the local health system

# Evaluating Ophthalmic Technicians

## Aims & Methods

### **Aims:**

Evaluate Ophthalmic Technicians:

- ❖ confidence levels in conducting refractions and prescribing spectacles
- ❖ knowledge of refraction
- ❖ practical skills and competency in conducting refractions and prescribing spectacles



# Evaluating Ophthalmic Technicians

## Methods

### Methods

- ❖ i) Background questionnaire
- ❖ ii) Investigative tools
  - a) Confidence levels questionnaire
  - b) Oral refraction quiz
  - c) Refraction competency assessment

# Background Questionnaire

## OCO's Inhambane

OCO	Location	Age	Experience	Course	Country of Study	No of patients refracted weekly
1	HPI	41	9	OOT (Optometry and Ophthalmic Technician)	Cuba	45
2	HPI	39	13	OOT	Cuba	45
3	HRC	39	12	OOT	Cuba	100
4	HRC	53	24	OCO (Ophthalmic Technician)	Mozambique	100

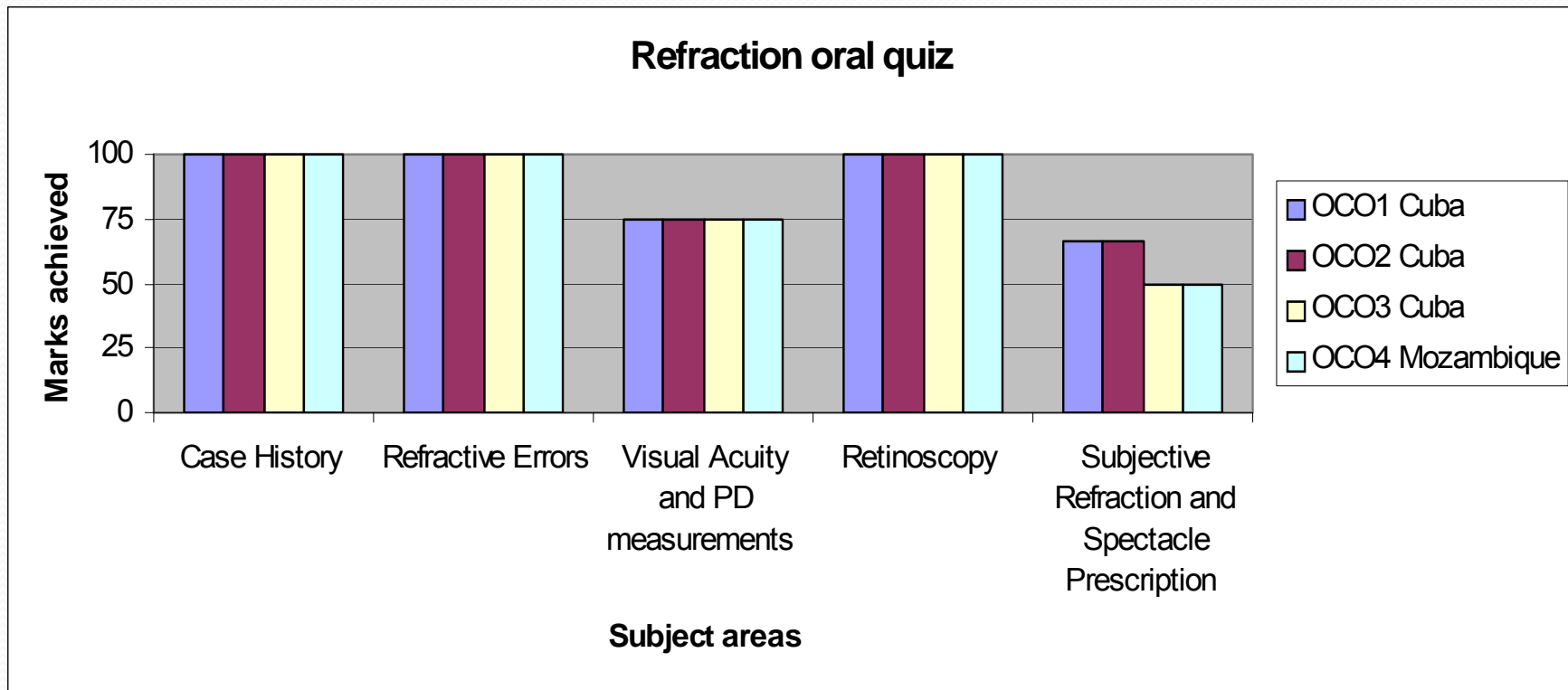


# Pre-training confidence skills questionnaire

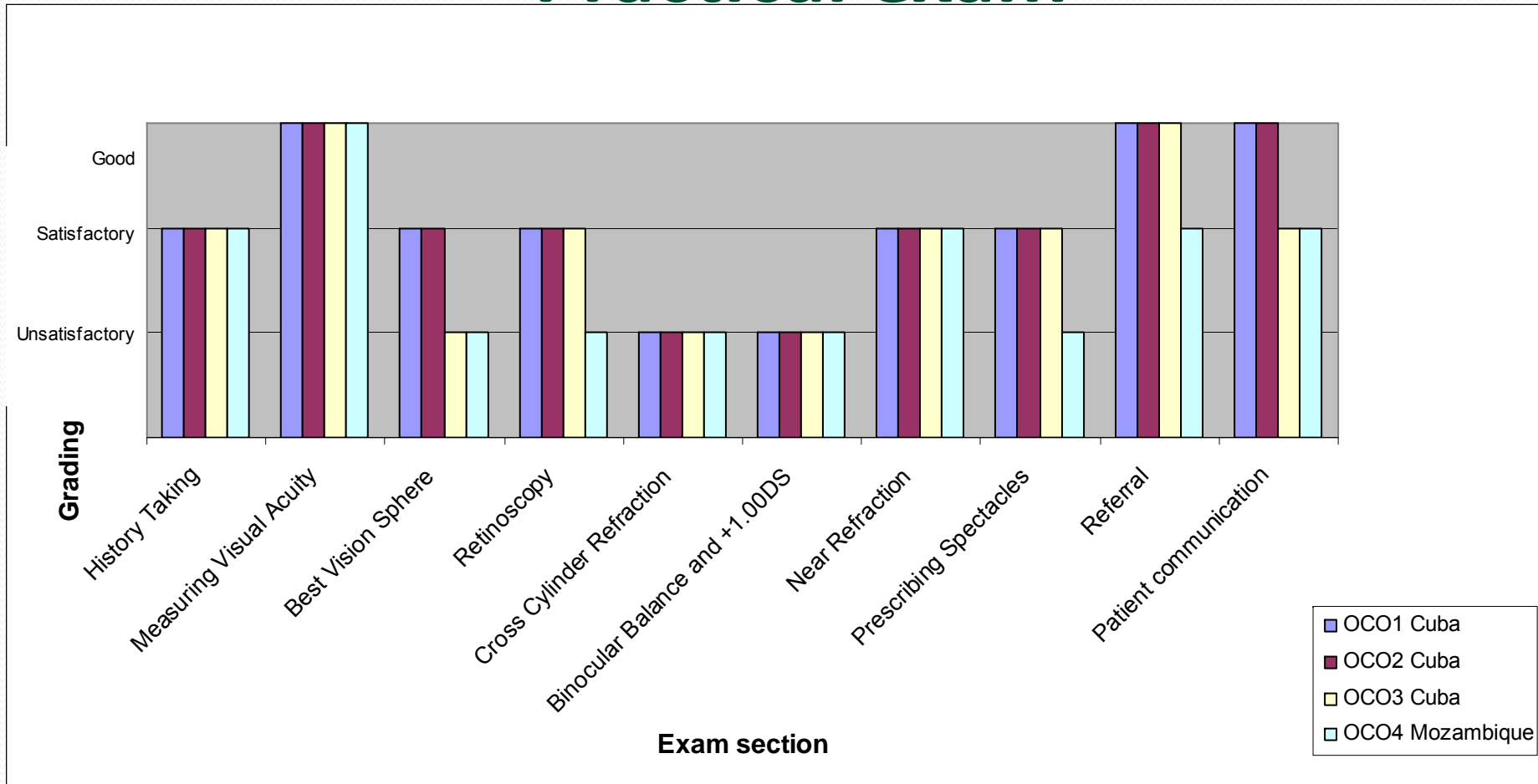
- None are confident in performing retinoscopy on astigmatic eyes
- None are confident in carrying out subjective testing
- Only one is confident in performing retinoscopy on spherical eyes



# Post training refraction oral quiz



# Practical exam





# Observations: Equipment

Equipment	Ophthalmoscope and retinoscope	Autorefractor	Focimeter	Acuity charts	Near Vision charts	Cross cylinders
HPI	Yes	Yes	Yes	2	No	No
HRC	No	No	No	3	No	No

# Observations: Equipment

HPI



HRC





# Conclusion

## Findings

- The Cuban trained OCO's were better than the OCO trained by MISAU in retinoscopy and subjective as they already had prior knowledge and practice of the skills
- - The lack of training in objective and subjective refraction leads them to perform inaccurate refractions
- - The lack of equipment is restricting the OCO's

## Recommendations:

- - Training to be provided
- - Equipment to be sourced and maintained
- - A monitoring and evaluation of the OCO's skills in 6 months
- - Provision of a database to track quantity of patients seen, type of refractive error and type of glasses dispensed.



# Overall

- OCO's retinoscopy and subjective knowledge is very basic. They might all need to be upskilled to refract
- A review of equipment and OCO skills in other provinces
- Refraction components should be standardised in OCO courses. They could all incorporate a standardised curriculum
- Analysis is extending to all 34 qualified OCO's

# Thank you



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