Evaluation of Ophthalmic Technicians, Refractive Service Providers in Mozambique

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Evaluation of Ophthalmic Technicians - providers of refractive services in Mozambique

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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\(^1\). 145 million people's low vision is due to uncorrected refractive errors (URE)
- Mozambique has an estimated 720,000 people with visual defects\(^2\).
- Visual impairment and blindness from URE is estimated at 156,000\(^3\)
- Mozambique is failing to meet the WHO recommended Vision 2020 ratio of eye care personnel and to head of population\(^4\)
- 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\(^5\)

1. Vision 2020: Right to Sight 2005
Eyecare Pathway of patients in Inhambane, Mozambique

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)

2 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

- i) Background questionnaire
- ii) Investigative tools
  - a) Confidence levels questionnaire
  - b) Oral refraction quiz
  - c) Refraction competency assessment
## Background Questionnaire
### OCO’s Inhambane

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

Refraction oral quiz

Subject areas

Marks achieved

Case History  Refractive Errors  Visual Acuity and PD measurements  Retinoscopy  Subjective Refraction and Spectacle Prescription

OCO1 Cuba  OCO2 Cuba  OCO3 Cuba  OCO4 Mozambique
Practical exam

Exam section

Grading

- Good
- Satisfactory
- Unsatisfactory

Exam section:
- History Taking
- Measuring Visual Acuity
- Best Vision Sphere
- Retinoscopy
- Cross Cylinder Refraction
- Binocular Balance and +0.00DS
- Near Refraction
- Prescribing Spectacles
- Referral
- Patient communication

Grading:
- OCO1 Cuba
- OCO2 Cuba
- OCO3 Cuba
- OCO4 Mozambique

Cuba
## Observations: Equipment

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Ophthalmoscope and retinoscope</th>
<th>Autorefractor</th>
<th>Focimeter</th>
<th>Acuity charts</th>
<th>Near Vision charts</th>
<th>Cross cylinders</th>
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</thead>
<tbody>
<tr>
<td>HPI</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>2</td>
<td>No</td>
<td>No</td>
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<tr>
<td>HRC</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>3</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>
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