World Council of Optometry Education Mentor Grant

Optometry Curricula and Competencies in Lebanon

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Beirut, Lebanon

Grant Applicant:
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Vision Care Association
Al Jamhour - Mount Lebanon - Lebanon

Academic Host:
Dr. Haytham Balouz, Chair
Optics and Optometry Department
American University of Science & Technology

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Acknowledgements

Executive Summary

Vision Care Association (VCA), a WCO country member in Lebanon has been advocating for the need to continuously update the optometry education offered by Lebanese universities to continuously be up to the competencies required for practicing optometry as per the World Council of Optometry (WCO) definition of optometry and as per the World Health Organization (WHO) eye care competencies framework. VCA has realized that such an endeavour would not have been achieved without support from experienced educators and external funding due to the economic crisis facing Lebanon post-COVID and the political instability that affected all sectors especially health services and education.

In order to ensure the curriculum competencies offered by optometry programs in Lebanon are aligned with WHO eye care competencies and fulfill the WCO definition of optometry, a proposed 1-week workshop hosted by the American University of Science & Technology (AUST) that included other universities in addition to education policy makers and eye care stakeholders with two mentors was approved for the WCO Education Mentor Grant and focused on the following workshop outline: curriculum design, syllabus design, eyecare competencies, teaching methodology, teaching resources for Optometry.

One of the mentors were Dr. Yazan Gammoh, Associate professor of Optometry at al-Ahliyya Amman University who introduced the Optometry Curriculum Domains and Competencies from various regional organization of optometry and WHO eye care competencies framework, made the educators aware of the global optometry education resources, and highlighted on the status of optometry education in the Eastern Mediterranean Region (EMR). Also, he introduced a pilot of the WCO Curriculum competencies and domains to allow a better understanding and implementation of the WCO optometry curricula competencies in emerging programs and developing countries. Prof. Vanessa Moodley, Professor in the Optometry Department at Kwazulu-Natal University, tackled the following topics: Accreditation schemes & quality assurance in education, students' evaluation Strategies for Theoretical, Practical and Clinical Courses. She provided an update on the historical development of optometry education in Africa. Furthermore, she laid the route and pathways that Lebanese universities can go through to implement changes in curricula offered to be aligned with the WCO definition of optometry. In addition, the mentors asked VCA to recruit Dr. Lina Hawat, specialized in ethics in healthcare professions, who

volunteered to conduct a workshop on ethics in healthcare including optometry within the context of the Lebanese culture.

Once all the activities have been accomplished, all participating universities and stakeholders have pledged to collaborate to improve and standardize optometry education in Lebanon.

Figure. Participants from Lebanese universities, education policy makers and eye care stakeholders at the end of the 1-week optometry curricula standardization initiative in Lebanon which was funded by the WCO Education Mentor Grant.

Participating universities and organizations

The following universities and their instructors have provided the mentors with their programs and curricula and participated in all the activities conducted:

Instructors		
Representative	**Name**	**Position**
Lebanese University (UL)	Dr. Abdullah Terro	Chair of Department
	Nour Daher	Instructor
	Mariam Zayat	Instructor
American University of Science & Technology (AUST)	Dr. Haytham Ballouz	Chair of Department
	Dr. Hiba Othman	Dean of Students
	Mira Jibbaoui	Instructor
	Rita Abou Ghaida	Instructor
	Sandra Shamsdeen	Instructor
Sainte' Famille University (USF)	Dr. George Harb	Chair of Department
	Lara Abou Eid	Instructor
	Christina Sawma	Instructor

The following policymakers attended the workshops:

Policymakers		
Ministry of Education & Higher Education (MEHE)	Dr. Abdel Mawla Shehabdeen	Head of equalization committee in the ministry Represented the higher education Department
	Layal Rabih	Equalization department at the ministry of education

The following stakeholders attended the workshops on ethics, understanding defining optometry and optometrists:

Stakeholders		
Representative	**Name**	**Position**
Vision Care Association (VCA)	Ameer Abou Adela	President
	Ali Ali	Vice President
	Rana Diab	Secretary
Lebanese Syndicate of Optometry Centres (LSOC)	Fadi Hakim	President
	Joe Romanos	Vice President
Eastern Mediterranean Council of Optometry (EMCO)	George Hawat	President Elect
Lebanese Sight Care Society (LSCS)	Johny Layyous	President
	Nathalie Elias	Secretary
World Sight Association (WSA)	Lina Hawat	President

Background

In Lebanon there are several universities that provide the Optometry program with different levels and the curricula not being unified among them. Also, some universities lack PhD holders in optics and optometry to lead the programs and others lack even Master's and bachelor's degree holders and Technical License holders are teaching. Some universities don't have optical and optometry labs that are up to WCO standards within them.

There are 4 universities in Lebanon offering a bachelor's degree program in optics and optometry:

1. Lebanese University (LU)
2. American University of Science & Technology (AUST)
3. Modern University of Business and Science (MUBS)
4. Université Sainte Famille (USF)

In order to ensure the curriculum competencies offered by optometry programs in Lebanon are aligned with WHO eyecare competencies and fulfill the WCO definition of optometry for a proposed 1-week workshop hosted by AUST and included other universities in addition to education policy makers and eye care stakeholders with two mentors was approved for the WCO Education Mentor Grant and focused on the following: curriculum design, syllabus design, eyecare competencies, teaching methodology, teaching resources for Optometry. MUBS was the only university not to participate as they felt that they could not share their program with the mentors and make it available for benchmarking with other programs

As there are 2 WCO country members in Lebanon, VCA and SOOLB, VCA has sent invitation to SOOLB to attend the workshop related to clinical competencies and scope of practice. SOOLB has sent a refusal letter to attend.

As VCA is a member of EMCO, they have approached EMCO president, Mr. Ahmad Tairi and EMCO representative to WCO education committee, Dr. Waleed AlGhamdi. Due to a recent flight ban from Saudi Arabia to Lebanon, both were not able to attend and Mr. George Hawat, EMCO President Elect volunteered to represent EMCO.

The original application included Professor Nisreen Alwan as an auxiliary mentor but due to work-related issues she was not able to attend. The mentors asked VCA to recruit Dr. Lina Hawat, Ethics in healthcare professions, who volunteered to conduct a workshop on ethics in healthcare including optometry within the context of the Lebanese culture.

Part I: Current curricula review and alignment

The mentors received all documents related to the optometry programs offered by the universities and benchmarked all the courses offered based on their course content and competencies. The exercise took a period of 2 days where consultations with the department chairs were conducted. The following is an outline of the benchmarked courses.

COURSE OUTLINE OF THE ATTENDING UNIVERSITIES

AUST BS	USF BS		LU BS
		L1	
Course	**Course**	**S1**	**Course**
	General Chemistry		Cell Biology
Computer Literacy	General Chemistry TP		Introduction to Human Anatomy
Composition & Rhetoric I	Structural Biochemistry		General Chemistry
Composition & Rhetoric II	General Microbiology		General Chemistry Lab
English Communication Skills	General Microbiology TP		Human Rights
Work Ready Now	Anatomy-Physiology (Systems)		Written and Oral Expression Techniques
	Cardiovascular Pathologies		French Language
Writing Skills	Geriatrics		Mathematics (Algebra and Trigonomy)
College Algebra	Introduction to Paediatrics		Fundamental of Optics and Optometry
	Endocrinology Pathologies		Public Health
Principles of Accounting I	Ocular Anatomy & Physiology		
Introduction to Physiology	Visual Ergonomics & perception	**L1 S2**	Biochemistry
Introduction to Microbiology	Ocular Microbiology & Immunology		Human Physiology
General Pathology	Ocular Pharmacology		Cytology and Histology
Cells & Molecules	Ocular Pathology I		Health Economics
Introduction to Physiology Lab	Ocular Pathology II		English Language
Cytology & Histology	Visual Impairment Readaptation & Visual Impairment		General Microbiology
Introduction to Chemistry	Optometry I:		General Microbiology Lab
Organic Chemistry for Health Sciences	Introduction to Optometry		Ocular Anatomy and Physiology

Health Sciences Seminars	Optometry I: Introduction to Optometry TP		Introduction to Optics
	Optometry II: General optometry		Sociology and Sexual Education
Optics I	Optometry II: General optometry TP		Computer System in the Hospital
Ocular Anatomy	Optometry III: Clinical Optometry		
	Optometry III: Clinical	**L2**	
Ocular Physiology	Optometry TP	**S3**	Introduction to Nutrition
Technology of Ophthalmic lenses I	Orthoptics		Ocular Refraction
			Binocular Vision and Accommodation
Dispensing Lab I	Orthoptics TP		
Clinical Practice Guidelines, Ethics, & Professional Develop	Optometry IV: Paediatric Optometry		Visual Perception
Practicum I: Internship in Optics showrooms & workshops	Optometry IV: Paediatric Optometry TP		Optics of Ophthalmic Lenses
Optics II	Advanced Clinical optometry		Optics of Ophthalmic Lenses Lab
Technology of Ophthalmic lenses II	General Optics		Optics of Contact Lenses
	Technology of ophthalmic Lenses I		
Dispensing Lab II	Technology of ophthalmic Lenses II		Visual Optics
			Practicum (Optic Shops and Centres)
Introduction to Contact Lenses			
Introduction to Contact Lenses Lab	Instrumentation		
		L2	
Contact Lenses	Physiological Optics	**S4**	Genetics
Contact Lenses Lab	Contact Lenses I		Clinical Optometry
Introduction to Optometry	Contact Lenses I TP		Clinical Binocular Vision
Introduction to Optometry Lab	Contact Lenses II		Clinical Optometry Lab
Introduction to Ocular Pharmacology	Contact Lenses II TP		Clinical Binocular Vision Lab
Optometric Clinical Application	Advanced Diagnostic techniques		Technology of Ophthalmic Lenses
Practicum II: Internship in Contact lenses Workshop	Project of Research in Optometry		Technology of Ophthalmic Lenses Lab
Optical Instrumentation	Practical		Clinical Contactology
	Practical Education - Optics I		
Optical Instrumentation Lab	Practical Education - Optics II		Clinical Contactology Lab
Technology of Ophthalmic Lenses III	Practical Education - Optics III		Practicum (Optic Shops)
			General Pathology and Disorders
Dispensing Lab III			

Optometry	Practical Education - Optometry I		General Pharmacology
Optometry Lab	Practical Education - Optometry II		
Visual Impairment	Practical Education - Optometry III	**L3** **S5**	Principles of Accounting
Introduction to Physiological Optics	Practical Education - Optometry IV		Human Development
	Practical education - Optometry V		Management of Refractive Errors
Binocular Vision			Management of Refractive Errors Lab
Binocular Vision Lab	Computer Literacy		Neuro-Ophthalmology
Ocular Therapeutics I	Ethics		Ophthalmic Dispensing
Process of Research	General Law		
Special Topics in Optics & Optometry	Communication & General Culture		Ophthalmic Dispensing Lab
	Introduction to university methodology		Advanced Contact Lenses
Ocular Therapeutics II			Advanced Contact Lenses Lab
Practicum III: Internship in Ophthalmology Centres	Research methodology		Practicum (Dispensing Laboratory)
	Medical glossary - English		
	Medical glossary - French		Ocular Pharmacology
	Pharmacology I		
	Education on Public Health	**L3** **S6**	General Immunology
	Physics		Principles of Marketing
	Biology		Paediatric Optometry
	Biophysics		Paediatric Optometry Lab
			Ocular Pathology (Anterior Segment)
	Biostatistics		Optical Instrumentation
	Quality Management I		Optical Instrumentation Lab
	Quality Management II		Contact Lenses Fitting
	Psychology		Contact Lenses Fitting Lab
	Marketing		Practicum (Eye Centres)
	Accounting		
		L4 **S7**	Contracts and Professional responsibilities
			Principles of Ergotherapy (Occupational Therapy)
			Business Computing
			Ophthalmic Application of Lasers
AUST MS Course			Ocular Pathology (Posterior Segment)

Advanced Physiological Optics		Optics of Low Vision
Advanced Contact Lens		Optics of Low Vision Lab
Advanced Optometry		Professional Contactology
		Professional Contactology Lab
Ocular Pharmacology		Geriatric Optometry
Advanced Binocular Vision		Geriatric Optometry Lab
Low Vision		Practicum (Eye Centres)
Writing Research Proposal		
Clinical trials		
Special Topics in Clinical Optometry	**L4** **S8**	Ophthalmic Investigative Techniques
		Ophthalmic Investigative Techniques Lab
Biostatistics & Epidemiology		Refractive Surgery
Clinical Contact Lens Lab I		Low Vision Therapy
Clinical Optometry Lab		Low Vision Therapy Lab
Research project		Orthoptic Vision Therapy
Master's Thesis		Orthoptic Vision Therapy Lab
		Ethics in Optometry
		Occupational Optics
		Practicum (Eye Centres)
		Principles of Psychomotricity

ADDITIONAL INFORMATION that was gained from the consultations:

AUST: Dr. Haytham Ballouz

Credits:

- 120 credits program for 4 years:

- College requirements 15 credits

- Free electives 6 credits

- General science requirements 25 credits

- Major courses 74 credits.

In summary students will fulfil within the first 4 years of the program

- 12 credits of laboratory
- 7 months of practicum
- one semester of mobile clinic
- Two courses designed for health seminars
- 59 credits of core optometry courses
- 15 credits college requirements
- 25 credits general science requirements

Recruitment and Acceptance:

There is no specific exam for optometry but rather just a general one for the acceptance to faculty of health science at AUST. When students are accepted and depending on the entrance exam score and the section studied at school e.g., Life Science, Socioeconomics, General Science or literature and humanities remedial courses are offered. For optometry the applicants they do entrance exam in English and math only with the absence of physics and biology exams.

USF - Lara Bou Eid

This is the newest university.

Credits:

- 132 credits
- 76 major courses
- 7 labs for each course
- 9 practicums
- 1080 hrs of practicum
- 70 credits general sciences

Recruitment: There is an entrance exam, and they only accept students who have life science background in grade 12.

Students mostly work in optical shops and the lecturers choose the optometry clinics, optical shops, and ophthalmology clinic as final practicum.

Foundation optometry levels: pathology courses: neurology, paediatrics, geriatrics, endocrine.

The major gap they identified is a gap in binocular vision, ethics, and clinical exposure.

Research is done in the final semester and students produce a research report.

Education of public health, quality management, research methodology and biostatistics is included within the program.

Students undertake theory and labs in contact lenses, low vision (1 semester), paediatrics (1 semester) and geriatrics (1 semester).

<u>Lebanese University –</u> Dr. Abdallah Terro

LU program serves as the one that all others benchmark against in Lebanon as it is the strongest program.

There have been gaps identified which they are working on but due to administrative challenges, this will take time.

One of the gaps is the level of education of the instructors but we are working on it and the resources (Labs) which is the most difficult part due to economic crises.

Program:

4 years and 8 semesters

Credits:

3740 credits for everything

1020 credits for optometry courses without lab

1080 credits for practicums

800 credits for labs

Recruitment and Selection:

There is a placement exam and an average of 100 students apply. They accept the first 15 students who have best results in English, chemistry, biology, and maths. The others remain on a waiting list if any of the chosen students is needed to be replaced.

General courses:

1st year covers general courses with other optometry courses

2nd year: general and ocular anatomy courses, cytology etc. Students also start going to train at optical shops.

2nd and 3rd year: dispensing + clinics/hospitals/eye centres. Screening campaigns in schools – included in practicum hours

3rd year: ocular refraction, focuses mainly on correction of refractive errors. Ocular pathology is done at end of third year.

5th year is not yet implemented. There must be specific criteria defined for where students go and what will they do in this year. Lack personnel to follow up with students and check

everything and monitors and measure standards. There is no agreement yet and the legislation is not fully implemented yet.

Students assigned to write case reports on all patients they see with presentation.

All the benchmarking exercises and consultations will lead to the following part:

Part III: Curriculum standardization and quality assurance

Part II: Students' engagement in optometry programs presentations & workshops

As students are the cornerstone of any academic program and in order to understand the students' point of view regarding optometry education and the profession the mentors travelled to a campus 60 Kms away through a hilly road with rock fall hazards to engage with students from different ethnic, gender, class and language backgrounds to capture their understanding of optometry, their opinion on the program they are currently undertaking and their knowledge of the profession once they graduate.

PRESENTATIONS

1. **A situational analysis of optometric education in the Middle East – Dr. Y Gammoh**

A synopsis of optometric education in the Middle East was presented, highlighting the population statistics, number of optometry programs, qualifications offered with duration and quality bodies/measures in place.

2. **What is a quality optometry program? – Prof. VR Moodley**

The visual impairment and blindness statistics served as a background for the need for a quality, standardized optometry program in Lebanon. Quality of care was discussed for both education and clinical practice and should be informed by the empirical data on the needs of the populations being served.

Workshop attendees were exposed to the evolution of optometry and WCO competency levels and that which is applicable to the profession of optometry.

WCO level 1: Optical technologists

WCO level 2: Refractive error vision therapy

WCO level 3: Ocular diagnostics (Optometrist)

WCO level 4: Ocular therapeutics

Figures: Students attending the workshop.

Mentors presenting to students.

Part III: Curriculum standardization and quality assurance presentations & workshops

WORKSHOP OUTCOMES

 On successful completion of this workshop delegates should be able to:

1. Understand and agree on the rationale for a framework for quality, socially accountable, standardized optometric education programs in Lebanon.

2. Reflect on the design, content, and current practices within each of the core academic program areas in the respective schools.

3. Identify and achieve consensus on the steps required to develop and implement a sustainable, quality, standardized program in the optometry schools in Lebanon.

WELCOME:

The leadership of AUST was represented by Dr Gretta Sleiman, Dean of Faculty of Health Sciences, AUST.

Figure. AUST representative

INTRODUCTION:

Instructors' credentials were presented and followed by workshop outcomes and expectations of attendees.

Figure. Instructors Credentials

PRESENTATIONS

3. A situational analysis of optometric education in the Middle East - Dr Y Gammoh

A synopsis of optometric education in the Middle East was presented, highlighting the population statistics, number of optometry programmes, qualifications offered with duration and quality bodies/measures in place.

Figure. Dr. Gammoh presenting about optometry situation in the Middle East.

4. Designing a quality optometry programme – Prof VR Moodley

The visual impairment and blindness statistics served as a background for the need for a quality, standardized optometry programme in Lebanon. Quality of care is needed in both education and clinical practice and should be informed by the empirical data on the needs of the populations being served.

Figure. Vanessa presenting about quality optometry programmes.

Education institutions in Lebanon face similar challenges which include lack of faculty members who hold PhD degrees in optometry, a lack of material and human resources and absence of regulations governing education quality.

Workshop attendees were exposed to the evolution of optometry and World Council for Optometry (WCO) competency levels and that which is applicable to the profession of optometry.

WCO level 1: Optical technologists

WCO level 2: Refractive error vision therapy

WCO level 3: Ocular diagnostics (Optometrist)

WCO level 4: Ocular therapeutics

Samples were presented in relation to:

- The hierarchy of regulatory/quality assurance bodies

- Competency writing for core academic areas

- Processes involved in quality assurance audits

The South African quality assurance in education model was reviewed and the identified gaps, barriers, and enablers common with Lebanon highlighted.

The concept of social accountability in optometric education was introduced to delegates, with the call made for a mindset shift when defining outcome competencies and designing individual institutions curricula

The proposed characteristics of a Lebanese optometry graduate were defined as:

- WELL RESPECTED, HIGHLY TRAINED

- EASILY IDENTIFIABLE

- HAVING INTERNATIONALLY RECOGNIZED QUALIFICATIONS

- LOCALY RELEVANT APPROACH

- PRACTICING FULL SCOPE OF OPTOMETRY

- SKILLS FOR MULTI-LEVEL/CONTEXTS

- QUALITY REGULATED ENVIRONMENT

- INTEGRATED INTO NATIONAL HEALTH SYSTEM

System requirements to produce the graduate who will make a meaningful impact are:

- Expanded standardized scope across country

- Accredited training programs – standardized qualifications & benchmarked training

- Regulatory/legislative frameworks developed

- Quality assurance systems

Requirements from delegates:

- Have a shared vision and commit to taking responsibility for the change needed

- Optometry schools collaborate to design outcome competencies
- Faculty credentialing and teaching competence to be factored into the process
- EMCO to assist by providing regional support

Concept of optometry from WCO's perspective: Dr Gammoh

Information on the situational analysis of optometric education, based on the survey compiled by Prof VR Moodley and conducted in 2017, was presented for programs offered in the EMCO (WCO's country member) region. It was highlighted that data was originally provided by the respective country representatives and may require updating.

WCO level 3 is generally aligned with most 4-year programs – Lebanon now is 4 years +1

Challenge of no accreditation or audits being conducted in Lebanon remain a concern as internal audits are not practiced on regular basis.

Figure. Dr. Gammoh presenting about the concept of optometry from WCO's perspective.

Part IV: Eye care standards workshops

Workshop: Understanding optometry.
The main outcome of this workshop is to have a *common understanding of optometry*
and definition of the optometrist.

The audience was introduced to optometry as a profession and have been asked to brainstorm
among the groups about their current knowledge/definition of what optometry is in Lebanon.
The figure below shows random thoughts as expressed by the participants. The common
concepts were that optometry is:

"**Not a medical profession but exists in a symbiotic relationship with ophthalmology and
is mainly focus on conducting refraction, performing ophthalmic diagnostic tests,
provision of spectacles, and dispensing contact lenses with an emphasis on the
commercial aspects**."

Figure: What is optometry in Lebanon according to participants.

Based on all the points expressed by the participants, the mentors have introduced the
concepts of primary, secondary, and tertiary care providers to entice the attendees to think
where optometry is positioned. Furthermore, the WHO concept of health districts was
introduced and discussed to identify the role of optometry at the levels of care as per the
World Report on Vision.

The second part of the workshop required the working groups to consider the question "who is an optometrist". After a period of discussion among the groups, the figure below shows what optometry educators, stakeholders and policymakers think who an optometrist is. In summary, the participants consider an optometrist to be:

"a primary eyecare provider who conducts vision care and eye care including vision therapy".

Figure: What is an optometrist according to participants.

The concept of detection/diagnosis of ocular diseases was discussed as many participants expressed that the role of optometrists in the detection/diagnosis of ocular diseases and their management was limited by the current legal situation and legal limitations of the scope of practice. This has allowed the mentors to introduce the WCO concept of optometry in addition to the WHO eye care competencies framework levels of eye care professionals and what is expected from an optometrist to have as a minimum.

As per all attendees, "optometrists" in Lebanon are allowed to perform the following:

1. Glazing and dispensing of spectacles
2. Conducting a refraction
3. Fitting of contact lenses
4. Conduct an eye screening

"Optometrists" in Lebanon are not allowed to perform the following:

1. Examine a child under the age of 12 years.
2. Examine an adult above the age of 50 years.

3. Use of diagnostic drugs

4. Use of therapeutics

5. Diagnose ocular diseases.

Further investigation into the course descriptions offered at the universities that offer undergraduate "optics and optometry" programs in Lebanon in addition to discussion with the chairs of departments have revealed that:

1. Ocular diseases courses cover the pathophysiology of ocular diseases including the symptoms, signs, assessment, and management strategies.

2. Ocular pharmacology and therapeutics cover the use of diagnostic and therapeutic drugs including ocular effects of systemic diseases and drugs.

3. Training on the use of diagnostic drugs in anterior and posterior segment assessments is only conducted in the laboratories of the campus or been observed at the ophthalmology clinic of the ophthalmologist who teaches at the university.

4. No application of diagnostics on real patients at the clinics is offered. This is partially since optometry clinics are not allowed by law to be established at university campus.

5. Even though students are required to attend ophthalmology clinics practicums, their role is mainly involved in observing the work of the ophthalmologists and training on operation of ophthalmic equipment or attending pre- and post-surgical care.

Workshop: Ethics in healthcare.

The main outcome of this workshop is to understand *the importance of ethics in healthcare including optometry.*

Dr Lina Hawat presented about ethics in general with the following concepts discussed:

-Ethics is a wide subject covering every field.

-Why ethics is important? Why it is important to teach ethics? - reality check (trend – protection – showing others their flaws – preaching – teaching opportunities – guide – code of conduct).

-Ethics is based on values – what you put into practice as actions not only intentions – the way to work with others and the spirit.

-Provide a framework for decision making and leadership – should be responsible, honest, and fair.

-Two approaches: values and rules

-Code of ethics is the most important, it ensures continuity and strengthen a profession.

-How to teach ethics, knowledge skills and behaviour should be added into curriculum theoretically and practically as well.

-Promote code of ethical conduct

Figure. Dr. Lina Hawat presenting about ethics in healthcare.

Part V: Pledge to improve and standardize optometry education in Lebanon

At the end of the WCO educator mentor grant workshop that was organized by Vision Care Association (VCA) during January 2023 in collaboration with the American University of Science and Technology (AUST) as an academic partner, with Prof. Vanessa Moodley and Dr. Yazan Gammoh being the workshop's facilitators, we, representing our respective organizations and institutions hereby agree to collaborate to improve and standardize optometry education in Lebanon through:

1- Defining the Lebanese graduates.
2- Engaging with each other and stakeholders to write outcome competencies for optometric education.
3- Collaborate with relevant ministries to increase access and quality of eyecare services in Lebanon.
4- Identify and achieve consensus on the steps required to develop and implement a sustainable, quality, standardized program in the optometry schools in Lebanon.
5- Understand and agree on the rationale for a framework for quality, socially accountable, standardized optometric education programs in Lebanon.
6- A common understanding of optometry and definition of the optometrist.
7- Agreement on the scope of practice for optometry in Lebanon.
8- Strategies for the enhancement of the quality of optometry practice in Lebanon.
9- An understanding of the role of ethics in optometric practice and education.

It was signed by:

Vision Care Association (VCA)

Eastern Mediterranean Council of Optometry (EMCO)

Lebanese University (LU)

American University of Science & Technology (AUST)

University Sainte Famille (USF)

Lebanese Syndicate for Optometry Centres (LSOC)

Lebanese Sight Care Society (LSCS)

World Sight Association (WSA)

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Conclusion and Recommendations

Upon the completion of all activities, meetings, presentations and workshops the following observations were reached, and the following recommendations would be valuable:

Recruitment and Acceptance:

For a student to be accepted in an Optometry program, there is no specific entrance exam for optometry instead students undergo general exams in for example math, chemistry, biology, English and physics depending on the university rules he or she is applying to and its requirements. Some universities do math, chemistry, biology, and physics and other universities only English and math.

Some universities only accept students with life science background in their grade 12 school year while other universities accept any student from any grade 12 section (general science, socioeconomic, literature and humanitarian) and certain remedial courses are added to their curriculum to support their knowledge.

Student that passes grade 12 can apply for the optometry program of any university without having a minimum grade for application.

Recommendations for pre-optometry and foundation level programme:

OAT exam is a must before accepting any student to be enrolled in the optometry program. Students that passed grade 12 should have a minimum grade in order to be able to apply to the optometry program.

There is a need to strengthen science foundation courses to ensure that students will have a good knowledge when doing ocular pathology. Ocular pathology course is very important but not applicable in all universities.

Public Health Course:

Students should get a basic understanding of the health system in Lebanon, how it is structured, community eye health, health resources available, prevalence and incidence of eye diseases etc. It is important that they do not only receive education and training for employment within the context of optical shops.

Program design

Overall, there is emphasis on optics and dispensing. This should be reviewed to accommodate key clinical and visual science optometry areas to align with WCO competencies for the profession of optometry. In addition, programs should be split into either optometry or optician route.

Human resources:

Lecturers are few and motivating for additional lecturers is a challenge as the number of optometry students is also few. Lecturers who hold a PhD in optometry should be recruited more into the programs.

Most optometry programs are head by ophthalmologists, a switch should be made into optometry PhD holders once available.

Recommendation: To be financially viable there should be common courses between optometry departments and lecturers in areas that are lacking may be shared amongst universities. An instructor with a minimum of bachelor's degree should be teaching lab courses, and masters and PhD holders should be teaching the courses.

Clinical Training:

The 5th year was introduced in the Lebanese optometry program to strengthen the clinical training of the students before graduating but should be purely a clinical year. But instead it is divided into 4 months training in optical shops, and 2 months in universities for research purposes, with only 2 months of clinical training. It is recommended to have a full one year of clinical training among all the optometry specialties in an eye clinic.

Mobile clinics will work as an interim measure, but effort should be made to ensure that the exposure must have all components of an eye examination and not merely a vision screening exercise which is only provided by VCA.

Practical (lab-based) vs Clinical (patient-based) exposure needs to be well articulated. Much of the clinical training involved students working on each other e.g., fit each other with contact lenses in 3rd year and do not fit general patients where there may be contact lenses contraindications/complicated corneal profiles/contact lens complications encountered.

Contact Lenses: After care and management of contact lens complications is a minimal when fitting contact lens. No specialty contact lens clinic at universities so there should be a review as to how these minimum contact lens standards can be incorporated into the clinic at universities. Contact lens clinics cannot be created by law so this should be addressed.

Paediatrics: children are not seen on campus. They get some exposure through the school mobile clinic program and may see younger patients at ophthalmology clinics.

Barrier: 1: age law which prevents optometrists from examining children below 12 years old.

Barrier 2: "management of complications that might result e.g., dilation might cause tachycardia or angle closure glaucoma, they will not know what the steps are to take?"

Recommendation: If the paediatric course is significantly strengthened to align with other countries, they can be used to lobby the government to review the law. It is advised that optometry research how many countries have optometrists examining and managing children and how many adverse effects have optometrists experienced with children. Thereafter, benchmark and design the course to cover everything that needs to be done, including the complications that may arise with the use of cycloplegic eye drops and protocols to manage any adverse effects.

Preparing students for the fifth year involves graduates working independently but supervised by professionals in optical shops or eye centres. However, there is no standardization document with defined minimum standards given to these supervisors and monitored by the university. A noted gap is the absence of standardized, supervised "patient-based" clinical exposure for students in all the areas of clinical optometry.

Recommendation: The criteria for accepting the "optical shops/centres" should be revised and defined by all universities together and periodic monitoring of the external training program by university lecturers and not by any syndicate or association.

The team (which ideally should include academics from each university) writing outcome competencies for each area in optometry must investigate what needs to be done to strengthen the current program as there should be minimum standards to examine all patients, including children.

Vision screening:

There are no minimum standards for vision screening for adults or children. It was highlighted that screening only with a VA chart is not to be considered vision screening as it only considers VA and not important elements such as ocular pressures, visual fields, internal ocular health, accommodation, convergence etc.

Binocular Vision:

This is an area of weakness as the biggest barrier to education is the availability of patients. If it is taught well as part of the undergraduate program, then optometrists can do it as a routine.

Non-strabismus patients are seen. The university does not need too much to set up a BV lab and should investigate it for future as binocular vision should not be considered as a speciality field as it is part of the primary eye care of a patient.

Low Vision:

There is a general lack of awareness of the availability of low vision devices by patients and no government support for devices. Patient do not know about visual aids, cannot afford them as they are currently very expensive.

Recommendation: This should be further investigated as there are many good, cost-effective low vision devices available globally which will enable the university clinics, public hospitals and optical shops to sell those devices. Enquiries should be made with other low-income countries to find these and bring them in.

Recommendation for improved research output: In the 4th year all universities should put students in groups and each group choose a topic and get assigned a supervisor. They then prepare a research protocol and submit for ethical clearance. Later in the academic year they present posters, research reports, and do podium presentations for the university.

Thereafter the 2 best projects from each university can present in an annual research undergraduate student symposium that includes students from all universities in a competition. Corporates can be approached to give the prizes and papers should be prepared for publication which can include the supervisor and the students' names.

This could plant a seed for more students deciding to do research master's degrees and PHD and strengthen research and innovation in Lebanon.

Alignment of optometry in Lebanon with WCO Level 3:

It is agreed that optometry in Lebanon is WCO level 2 and should be at WCO level 3 and that stakeholders should work to reach this level. There is a roadmap to reach level 3, starting the first step at this workshop.

Optometrists working at clinics in collaboration with ophthalmology can be considered at level 3 by their knowledge and experience, then the base is found and so what is needed is to work together to improve the level of education so that stakeholders can uplift the law.

Training is needed to improve the level.

The curriculum in some universities is setting up optometrist to do what he/she is supposed to do as a level 3 optometrist, but it is just needed to be defined.

The optometrists are learning it, but they cannot apply it due to restrictions.

The old graduate can bridge if they want to be depending on the route they choose to follow.

Separate optometrist from optician.

Like ophthalmology residency, there should and can be a place for optometrists to train as well.

Roadmap:

Scope of profession outcome competencies: educators, syndicates/VCA, Government

Bridging plus undergraduate curricula, regulations

How will the public know: advocacy (Who?), everyone!

Two big responsibilities: responsibility of educators for identifying gaps for the optometrist to do this role and benchmarking everybody and contacting all and calling all experts to see how and what is been taught to check and get the best of what is being taught.

The next step is that educators have a big responsibility to find gaps, as they know what to put in the courses then they should introduce the competencies for each depending on what the knowledge, skills, and attitude that are needed and how it's going to be assessed.

This will then help the people that are going to organize the bridging along with the presence of the syndicates because they know how the things are working out outside to reach the bridging program that meets the needed level.

Once they have all this as a group politician in the room should open the doors for legislation and regulations in accordance with legislation.

Lebanon should have a very strong advocacy program to inform and define what is optometry, awareness should be done by everybody.

Employers of graduates should be aware and should not be surprised of what your optometrists can do.

Lack of equipment when screening is a problem, people should know what you are doing.

The relation with the employers is good, from them we know the gaps that we should fill.

Teachers should take feedbacks from employers to tell the gaps.