Scope of optometry practice in the Eastern Mediterranean Region

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Abstract

Background: Optometry regulation and practice vary by country in the Eastern Mediterranean Region, therefore, understanding the disparities is crucial for optimizing eye care services in the region.

Aim: To evaluate the professional regulations, clinical practices and barriers to providing specialized optometry services in the Eastern Mediterranean Region.

Methods: Between April and September 2024, this cross-sectional survey collected data on professional regulations, clinical practices and barriers to specialized optometry services from 383 optometrists in the Eastern Mediterranean Region countries that recognize optometry as a profession. The data were analysed using SPSS version 29 and descriptive analysis was conducted.

Results: Eighty percent of the respondents said there was national legislation and mandatory registration to obtain a practicing license in their countries. Almost all the optometrists said they had authority to prescribe spectacles (97.9%) and dispense contact lenses (94.3%), while only 29.2% said they were licensed to prescribe therapeutic drugs. Almost all the respondents (95.6%) assessed visual acuity, while only 18.1% performed contact tonometry. Insufficient training (33.6%) and lack of equipment (29.3%) were the main barriers to providing specialized optometry services.

Conclusion: There are significant variations in the scope of optometry practice in the Eastern Mediterranean Region countries and optometrists primarily provide basic eye care services. There is a need to widen the scope of optometry practice in the region and provide more comprehensive training and equipment support to enable optometrists to meet the diverse and evolving eye care needs.

Keywords: optometry, professional regulation, registration, spectacles, contact lens, visual acuity, tonometry, Eastern Mediterranean

Citation: Mohamed Z, Alrasheed SH, Gammoh Y, Abdu M, Noushad B, Alshamli N, Alghamdi WM. Scope of optometry practice in the Eastern Mediterranean Region. East Mediterr Health J. 2025;31(5):325–331. https://doi.org/10.26719/2025.31.5.325.

Received: 11/09/2024; Accepted: 14/01/2025

Introduction

The WHO Eastern Mediterranean Region (EMR) includes 21 countries and one territory, with an estimated population of 679 million (*1*,*2*). In 2012, the overall prevalence of blindness in the EMR was 12.5% across all ages (*3*). In a recent study, the prevalence of childhood visual impairment in the EMR was 11.57; mainly caused by uncorrected refractive error and amblyopia (*4*). Uncorrected refractive error, particularly myopia, continues to be a significant contributor to preventable visual impairment in the EMR, as in many other countries (*5*–*7*).

Optometrists offer comprehensive eye and vision care services, including refraction, detection and diagnosis of ocular diseases, management of these conditions, and rehabilitation (*8*). Optometrists play a crucial role in meeting global, regional and local eye care needs (*8*, *9*). Therefore, they are vital in combating visual impairment and blindness globally by detecting and managing, with other eye and visual care professionals, conditions such as uncorrected refractive error and other vision-threatening disorders. This helps to reduce the burden of preventable visual loss and improve the quality-of-life (*6*,*8*). Optometry has undergone considerable changes globally that have resulted in variations in practice patterns and the range of services offered (*10*). These changes have been driven by advances in education, clinical practices and technology, and have broadened the role of optometrists (*11*,*12*). Optometrists now serve as primary health care providers and specialize in areas such as contact lenses, visual impairment, and disorders of paediatric and binocular vision (*13*). Advanced diagnostic tools such as fundus photography, corneal topography and optical coherence tomography have become commonplace, enhancing the clinical services provided by optometrists (*10*,*11*).

Optometry practice varies globally, with competency and practice guidelines outlined in the optometry curricula, and country-specific regulations play a crucial role. In the United States of America (USA), optometrists complete a Doctor of Optometry (OD), whereas in the United Kingdom, they undertake a bachelor's degree (*13*). Many countries in Asia, Africa and Europe offer a bachelor's degree in optometry, as well as other adapted OD programmes (*14*). The WHO eye care competency framework has set the minimum training requirements

for optometry to be a 4-year bachelor's degree (15). Gammoh and Moodley (2) reported on optometric education in the EMR, showing that 36.4% of the countries offered bachelor's degrees, 22.7% offered diplomas and 27.3% had no structured optometry education, with only Saudi Arabia offering OD programmes. The study also reported variations in optometry programmes, expected curricular competency levels, and quality monitoring systems across EMR countries. They emphasized the need for regional collaboration to standardize and improve the quality of optometry education, which will ultimately reflect on the scope of practice.

This study assessed the scope of optometry practice in EMR countries, complementing the existing literature on optometry education and providing a clearer understanding of eye care services rendered by optometrists.

Methods

Study design

A cross-sectional study was carried out between April and September 2024. An online, self-administered questionnaire was used to collect the necessary data, which was constructed by thorough analysis of existing literature and input from eye care professionals (14, 16). Following the preparation of the questionnaire, 12 subject experts assessed the questions for their relevance, clarity and representativeness.

Study sample

The sample size was determined using the Cochrane formula (nonprobability sampling technique). Considering a confidence level of 95% and a 5% margin of error for an estimated population of 11 770 optometrists across 16 countries in the EMR, the minimum sample size was calculated to be 385 (2). Considering a 10% nonparticipation rate, the final sample size was estimated to be 424 optometrists.

Data collection

The survey consisted of 29 questions, divided into 2 sections. The first section comprised 7 questions that gathered demographic information about optometry professionals, such as age, gender, educational qualification, country of origin, country of practice, and years of experience. The second section contained 22 questions about optometry practices, including professional registration, affiliation with professional associations, routine clinical skills, and prescribing licenses. The survey was distributed online through email, WhatsApp channels and other social media platforms of optometrists in the region.

Data analysis

SPSS version 29.0 was used to analyse the data, and Excel 2023 was used to create the appropriate graphics. A descriptive analysis was conducted on demographic data, and $P < 0.05$ was used to indicate statistical significance.

Ethics considerations

Ethics approval (approval number: AY23-24COHS-173) was obtained from the Research and Ethics Committee of the University of Buraimi and the research was conducted in accordance with the principles of the Declaration of Helsinki. The contributing participants were not personally identified, and participation was voluntary. Online written consent was obtained prior to participation in the study.

Results

Demographics

The survey collected responses from 383 optometrists practising in the EMR. Most respondents were male (55.6%), and held a bachelor's degree in optometry (63.7%) (Table 1). Two hundred and eighty-two (73.6%) of the respondents were aged between 20 and 40 years, and 74 (19.3%) had > 20 years of professional experience (Table 1). The majority of participants were natives (34.2%) and graduates (38.2%) of Sudan. In Saudi Arabia (34.7%), Iraq (13.6%), Oman (8.4%) and the United Arab Emirates (5.7%), most optometrists were expatriates (Table 2). The Syrian Arab Republic, Morrocco and Egypt were excluded from the analysis because the profession was not recognized in those countries.

Optometry professional bodies and practice regulations

The majority of participants (80%) confirmed the existence of a legislative body and/or an optometry regulatory board at the national level, with 79.8% stating that registration with these bodies was mandatory to obtain a practicing license (Table 2). Of the participants, 80.9% reported the existence of an optometrist disciplinary code

Table 1 Demographic characteristics of study participants (N = 383)

Category	Variable	Frequency (%)
Age (years)	20–30	146 (38.1)
	31–40	136 (35.5)
	41–50	64 (16.7)
	51–60	26 (6.8)
	> 60	11 (2.9)
Gender	Male	213 (55.6)
	Female	170 (44.4)
Qualification	Diploma	32 (8.4)
	Bachelor	245 (63.7)
	Masters	90 (23.5)
	PhD	16 (4.2)
Experience (years)	Recent graduate	40 (10.4)
	< 10	165 (43.1)
	< 20	104 (27.2)
	> 20	74 (19.3)

of conduct. A similar proportion indicated the presence of optometry associations in their country, with 64% holding membership of such associations. Nearly every optometrist reported that they had authority to prescribe spectacles (97.9%) and dispense contact lenses (94.3%). More than two-thirds of the optometrists indicated that they had permission to use diagnostic ocular drugs, and ≈30% held a license to prescribe therapeutic drugs. Around 80% were involved in certifying visual standards for driving and occupational requirements in their respective countries (Table 3).

Nature of practice and work setting

Ninety per cent of the practice locations were almost equally divided between optical centres (32.2%), eye clinics or eye hospitals (29.9%) and general hospitals (both public and private) (29.1%). All primary eye examination skills, including case history, visual acuity assessment, and objective and subjective refraction, were routinely performed (Table 4). However, assessment of pupillary reflexes and binocular vision was not frequently performed. Only one-third of the participants routinely performed slit lamp biomicroscopy, fundoscopy and tonometry as a part of their routine clinical examinations.

Integrating specialty eye care services for successful optometry practice

All participants expressed their opinion on the necessity of offering specialized optometry services, including refraction and dispensing (93.8%), primary eye care (86.0%), assessment of binocular vision (84.0%), paediatric optometry (81.4%), dispensing contact lenses (74.0%), low vision rehabilitation (64.6%) and refractive surgery (34.1%).

Table 2 Percentage distribution of optometrists by country

Country	Native country	Country of study	Country of practice
Bahrain	0.2	0.0	0.2
Egypt	2.0	2.2	2.0
Islamic Republic of Iran	0.5	1.0	0.5
Iraq	12.4	11.2	12.9
Jordan	6.0	7.0	5.7
Lebanon	1.7	1.7	1.5
Morocco	0.2	1.0	0.2
Oman	6.2	5.0	8.0
Outside EMR	4.5	8.2	0.0
Pakistan	14.7	14.9	12.7
Palestine	1.7	1.0	1.0
Qatar	0.2	0.0	1.0
Saudi Arabia	9.5	7.2	34.7
Somalia	1.0	20.0	1.0
Sudan	34.2	38.2	8.7
Syrian Arab Republic	0.2	0.0	0.0
Yemen	2.0	0.0	1.5
United Arab Emirates	0.5	0.0	5.5
Libya	0.0	0.0	0.2

Table 3 Availability of optometry professional bodies and practice regulations

Professional body/practice regulation	Yes (%)
Presence of national legislative body	80.4
Presence of regulatory professional board	71.1
Necessity to register with the legislative body	79.8
Disciplinary code of conduct for optometrists	80.9
Presence of national professional optometry associations	78.0
Holds membership in professional associations	63.6
Permission to prescribe spectacles	97.9
Permission to dispense contact lenses	94.3
License to use diagnostic pharmaceutical agents	63.3
License to use ocular therapeutic drugs	29.2
License to prescribe eye medications	29.7
Certify vision standards for driving	79.6
Certify vision standards for occupation	77.0
Continued professional development required to renew license	65.9

Barriers to practicing optometry subspecialties

The participants acknowledged the importance of having specialized optometry services at their workplace. However, they highlighted insufficient training (33.6%) and a lack of devices and equipment (29.3%) as the primary barriers to offering such services. Other minor barriers included insufficient funding, nonsupportive work environment, time constraints and legal issues.

Preferred mode of continuous professional development

Continuous professional development is essential to keep abreast of the latest developments in the field. Most of the participants voted for scientific conferences (69.7%) followed by internet resources (52.3%) and community service (34.8%).

Discussion

The scope of optometry practice varies globally, with differences in regulations governing the profession's practice options. Although the primary focus is on refraction, visual function assessment and visual aid prescription, the use of therapeutic and diagnostic medication is not uniformly allowed for optometrists worldwide (*12*). This variation in optometry practice permission highlights regulatory restrictions (*12*, *17*). The Gulf Cooperation Council countries, which make up a significant portion of the EMR, have their unique characteristics. A large proportion of optometrists in these countries are expatriates compared to those who are indigenously trained, bringing in a diverse group of optometrists from different countries, with diverse

Table 4 **Clinical procedures performed routinely**

Procedure	Frequency (%)
Visual acuity	95.6
Case history	92.0
Subjective refraction	90.2
Retinoscopy	75.2
External eye examination	74.2
Pupillary reflexes	66.1
Binocular vision assessment	61.8
Contact lens fitting and assessments	49.4
Slit lamp biomicroscopy	42.4
Ophthalmoscopy	38.0
Noncontact tonometry	33.1
Contact tonometry	18.1
Visual field analysis	32.3
Low vision assessment/examination	29.5

training and clinical expertise (*18*). Therefore, this study was conducted to evaluate the scope of optometry practice in the EMR with the exception of Syrian Arab Republic, Morrocco and Egypt where optometry is not recognized as a profession.

The results of this study confirm the presence of a national legislative body and/or a regulatory professional board that is responsible for overseeing the optometry profession, with mandatory registration being a prerequisite for practice. In most countries, a code of conduct governs the conduct, actions and decision-making processes of optometrists.

The EMR, prescriptions for spectacles and contact lenses are legally permissible. However, the prescription of topical medications is subject to strict control because of the regulations. We found that only 29.7% of participants were licensed to prescribe therapeutic drugs. Despite the regulatory restrictions on medication prescription, nearly 30% reported that they prescribed eye drops in practice. This deviation from the established regulations appears to have occurred primarily in critical situations where access to an ophthalmologist was limited or unavailable. While this practice is not officially permitted, it reflects the reality of health care delivery in areas where immediate ophthalmologic care is inaccessible, prompting optometrists to act in the best interest of the patient. Apart from routine eye care services, certifying visual standards for driving and other activities are the responsibility of optometrists in several EMR and other countries (*12*, *19*, *20*).

Understanding the disparities in the scope of practice is essential for optometrists and patients. It is also crucial that optometrists practice within the legal and regulatory frameworks of their respective countries, as this ensures that patients receive appropriate and safe eye care based on the qualifications and competence of optometrists. We found that the most common clinical procedures carried out by optometrists in the EMR were basic primary visual care, such as case history taking, visual acuity measurement, objective and subjective refraction, and external eye examination. This trend has been reported in countries with comparable sociodemographic situations, such as Jordan (*16*), Trinidad and Tobago (*12*), Singapore (*19*) and Ghana (*14*). Although it would be expected that all optometrists perform visual acuity assessment, only 95.6% reported doing so. The remaining 4.4% may have depended on orthoptists or nurses, as these professionals are involved in visual acuity assessment, especially in a hospital setting (*21*).

Previous studies have reported that the use of some diagnostic tests and specialized clinical approaches, such as ophthalmoscopy, tonometry, topography, visual field analysis and low vision services, were less frequently practiced than primary eye examination (*14*, *22*). Despite limited use of these approaches, the willingness to integrate diagnostic practices into routine optometry services in the EMR is encouraging because it widens the scope of optometry practice. This trend can be attributed to the advanced OD programmes offered in Saudi Arabia, the influence of expatriate optometrists, and the increasing number of western-qualified optometrists. It is crucial to raise awareness among optometry workforce and managers regarding the advantages of integrating diagnostic optometry with eye care services, which play a vital role in identifying diseases such as keratoconus and glaucoma, fitting contact lenses, evaluating and managing binocular vision disorders, and conducting low vision assessments (*23*). It is important to include such practices in optometry curricula and training, which could involve short short-term training programmes to enhance continuous professional development.

A bachelor's degree (4–5 years) provides a broad foundation in optometry, allowing graduates to manage refractive errors, binocular vision disorders, and other visual issues across all age groups, using diagnostic eye drops and providing optical correction. OD programmes (5–6 years) focus on diagnosis and treatment of eye conditions, prescribing optical correction and therapeutic drugs, with extensive clinical training. Both degrees are necessary for optometry licensure.

Another interesting pattern observed was the variation in the clinical tests performed by optometrists who had qualified from different programmes. For instance, optometrists who completed longer and more advanced OD programmes tended to offer more specialized eye care services such as dispensing contact lenses, binocular vision assessment and fundus eye examination, than optometrists who completed 4-year bachelor's programmes. Similar differences have been reported in other countries (*14*, *24*). Conversely, in the USA the scope of optometrists has expanded to include diagnosis and therapy (*25*). This trend can be attributed to the increased clinical exposure and the broader range of competency gained through these extended educational programmes. Such variation in educational standards compromises setting a common and overarching set of

professional guidelines and negatively affects the public health policies set by governments (*26*).

Participants in this study emphasized the importance of integrating specialized optometry services into their routine practice. However, they identified significant barriers to achieving this integration, including insufficient training, and lack of essential equipment and devices. To address these challenges, it is recommended that targeted continuing education programmes are developed to enhance specialized skills among optometrists. Improving access to the necessary diagnostic equipment and devices is crucial. Investment in both education and infrastructure is key to enabling optometrists to expand their scope of practice and deliver comprehensive eye care services in the EMR.

Continuous professional development is needed for optometry professionals to maintain and enhance their clinical skills, stay abreast of the latest advancements in eye care, and provide the highest standard of patient care (*27*). This study revealed that many countries in the EMR have established their own optometry associations and professional bodies. These organizations can play a pivotal role in supporting continuous education of optometrists by regularly organizing conferences, scientific sessions and training workshops. These events offer valuable opportunities for practitioners to learn emerging techniques, interact with experts and refine their expertise, ensuring that they remain up to date. These observations highlight the importance of eye care services that optometrists can offer to the population in the EMR and indicate the need to support the expansion of the scope of optometry in the region where needed (*28*).

Limitations of the study

This study had some limitations; the most notable being the reliance on survey distribution through specific optometry associations and group leaders in the EMR. This approach may have introduced bias, as the responses were predominantly from particular countries, and may not represent the situation in the whole region. Countries, such as the Islamic Republic of Iran, had lower participation because of limited access to Google Forms; the online form used in the current study. Another limitation was that the questionnaire relied solely on the expert validity method. Response rates, nonrespondent characteristics, anonymity and ethics considerations all have an impact on online sample surveys, including this study. The study design was cross-sectional, which had its own predicted limitation of recall bias by the participants, and social acceptability bias where certain participants may not have felt comfortable to answer certain questions. These predicted limitations could not be mitigated by the investigators. Future research needs to address access to online surveys in each country and find a platform that is acceptable to all countries. There is a need to investigate the scope of optometry practice in the under-represented countries separately and explore the unique challenges faced by optometrists in each country to enhance services region-wide. This study presented an overview of the status of optometry in the EMR in terms of practice and education, which has not been investigated previously at such a level. We believe this work contributes to the understanding of optometry services in the region and could assist policymakers and stakeholders in strategic planning.

Conclusion

This study highlights the need for a more comprehensive optometry practice in the EMR in terms of training in specialized services and advanced diagnostic procedures. This may be achieved by integrating all aspects of optometry care into the training curricula and providing continuous professional development, which could address some of the identified barriers. By investing in education and infrastructure, the EMR can better equip optometrists to meet the diverse and evolving eye care needs of its population.

Funding: None.

Competing interests: None declared.

Champ de pratique de l'optométrie dans la Région de la Méditerranée orientale

Résumé

Contexte : La réglementation et les pratiques en matière d'optométrie varient selon les pays de la Région de la Méditerranée orientale. Par conséquent, il est essentiel de comprendre ces disparités pour optimiser les services de soins oculaires dans la Région.

Objectif : Évaluer les réglementations professionnelles, les pratiques cliniques et les obstacles à la prestation de services spécialisés en optométrie dans la Région de la Méditerranée orientale.

Méthodes : La présente enquête transversale a permis de recueillir, entre avril et septembre 2024, des données sur les réglementations professionnelles, les pratiques cliniques et les obstacles à l'accès aux services d'optométrie spécialisés auprès de 383 optométristes issus des pays de la Région de la Méditerranée orientale reconnaissant cette discipline comme profession. Les données ont été traitées à l'aide du logiciel SPSS version 29 et une analyse descriptive a été effectuée.

Résultats : Quatre-vingt pour cent des répondants ont déclaré qu'il existe une législation nationale et un enregistrement obligatoire pour obtenir une licence d'exercice dans leur pays. Presque tous les optométristes ont déclaré qu'ils avaient la capacité de prescrire des lunettes (97,9 %) et de distribuer des lentilles de contact (94,3 %), alors que seulement 29,2 % ont déclaré qu'ils étaient autorisés à prescrire des médicaments thérapeutiques. La quasi-totalité des répondants (95,6 %) ont évalué l'acuité visuelle, alors que seulement 18,1 % ont effectué une tonométrie de contact. Les formations insuffisantes (33,6 %) et le manque d'équipement (29,3 %) étaient les principaux obstacles à la prestation de services d'optométrie spécialisés.

Conclusion : Il existe des variations importantes dans le champ d'exercice de l'optométrie dans les pays de la Région de la Méditerranée orientale. Les optométristes fournissent principalement des services de soins oculaires de base. Il est donc nécessaire d'élargir la portée de la pratique de cette discipline dans la Région, de proposer une formation plus complète ainsi qu'un soutien en matière d'équipement, afin de leur permettre de répondre à la diversité et à l'évolution des besoins en matière de soins oculaires.

نطاق الممارسة في مجال البصريات في إقليم شرق المتوسط

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الخلاصة

الخلفية: لوحظ أن ثمة اختلافات وفروق في تنظيم مجال البصريات وممارسته بين البلدان في إقليم شرق المتوسط، لذلك، فإن فهم أوجه التفاوت أمر بالغ الأهمية لتحسين خدمات رعاية العيون في الإقليم.

الأهداف: هدفت هذه الدراسة الى تقييم اللوائح المهنية والممارسات السريرية والعقبات التي تحول دون تقديم خدمات متخصصة لقياسات البصر في إقليم شرق المتوسط.

طرق البحث: في الفترة بين أبريل/ نيسان وسبتمبر/ أيلول 2024، جمع هذا المسحُ المقطعي بيانات عن اللوائح المهنية والممارسات السريرية والعوائق التي تحول دون تقديم خدمات متخصصة في قياس النظر من 383 أخصائي بصريات في بلدان إقليم شرق المتوسط التي تعترف بمهنة قياسات البصر. وحُللت البيانات بالإصدار 29 من برنامج *SPSS*، وأُجري تحليل وصفي لها.

النتائج: أفاد 80٪ من المُشاركين في المسح بوجود تشريعات وطنية وتسجيل إلزامي للحصول على ترخيص مزاولة المهنة في بلدانهم. وقال معظم أخصائيي البصريات إن لهم صلاحيات وصف النظارات (97.9٪) وتوزيع العدسات اللاصقة (94.3٪)، في حين قال 29.2٪ فقط إنهم حاصلون على ترخيص لوصف عقاقير علاجية. وتقريبًا جميع المشاركين في المسح (95.6٪) قيَّموا حدة البصر، في حين أن 18.1٪ منهم فقط أجروا قياس توتر العين باللمس. كما ذكر أن العقبات الرئيسية التي تحول دون تقديم خدمات متخصصة في قياس البصر هي عدم كفاية التدريب (33.6٪) ونقص المعدات (29.3٪).

الاستنتاجات: توجد تفاوتات كبيرة في نطاق ممارسة قياس النظر في بلدان إقليم شرق المتوسط، إذ يقتصر دور أخصائيي البصريات على تقديم خدمات رعاية العيون الأساسية في المقام الأول. وثمة حاجة إلى توسيع نطاق ممارسة قياس البصر في الإقليم وتوفير تدريب أكثر شمولاً ودعم المعدات، لتمكين أخصائيي بصريات من تلبية احتياجات رعاية العيون المتنوعة والآخذة في التطور.

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