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Abstract

Background: There is a scarcity of research evidence on the state of optometry education in the Eastern Mediterranean Region (EMR).

Aims: To assess the state of optometry education in the EMR and provide evidence for policymakers and stakeholders.

Methods: Twenty-two purposively selected key academic stakeholders from 21 countries and the Eastern Mediterranean Council of Optometry completed a semi-structured optometry situation analysis questionnaire about the state of optometry education in their respective countries between August 2021 and January 2022. Data was analysed using SPSS version 25.

Results: Data from 19 (86%) of the 21 countries and 1 territory were included in this analysis. Eight (36.4%) countries offered bachelor's degree programmes and 5 (22.7%) offered a diploma, 6 (27.3%) countries did not offer any optometry education. Saudi Arabia offered a doctor of optometry programme. Programmes were accredited by an accreditation body through periodic quality audits in 7 countries. Morocco had the highest average number of graduates per annum (n = 305), while Yemen had only 20.

Conclusion: EMR countries differ in the number of optometry education programmes offered, as well as in their curricular competency levels and systems to monitor quality standards. There

is a need for regional collaboration to harmonize and improve the quality of optometry education in the EMR.

Keywords: optometry, optometry education, Eastern Mediterranean Region, quality assurance, regional harmonization

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Introduction

The World Health Organization (WHO) Eastern Mediterranean Region (EMR) comprises 21 countries and 1 territory, with an estimated 679 million people (1). The varying political, lifestyle, and socioeconomic conditions across the Region contribute to significant variations in the provision of general and ophthalmic healthcare services (2,3). As observed in many other regions, uncorrected refractive error remains one of the main causes of avoidable visual impairment in many EMR countries (4). Despite many efforts over the years, visual impairment, including avoidable impairment caused by uncorrected refractive error, still affects millions of people worldwide (5).

Optometrists are primary healthcare providers that deal with eyes and vision (6), and are an integral part of the workforce that is required to meet global and regional eye care needs (7). The training of eye care personnel has been identified as a key element in reducing blindness and avoidable visual impairment (8). Human resource development is a priority; thus, there is a need in developing countries for higher education to provide good quality education programmes in optometry to enhance the workforce (9). The issue of quality assurance in optometric education has been raised previously (10), and supported by a call to standardize health sciences education, including optometry, in the EMR through accreditation schemes to

ensure quality (11,12).

Most of the data available on optometric education and training are from developed countries such as the United States of America (USA) and the United Kingdom of Great Britain and Northern Ireland (UK); and the data do not correlate with the situation in optometric education in the EMR (13). There is a scarcity of research evidence regarding optometric education in the EMR, with data only available for Sudan and Saudi Arabia (14,15). Optometric education was established in 1954 in Sudan (14) and 1985 in Saudi Arabia (15). However, there is no information on the impact of initiation of these programmes on development of optometric education in other countries within the region.

It is unknown whether each country within the EMR has optometric education programmes, the qualifications offered, structures of the existing programmes, or regulations governing optometric education and training. Therefore, to address the human resource needs for visual and eye care planning, we conducted a comprehensive assessment of the education of optometrists in all countries in the EMR.

Methods

Study design and data analysis

This was a cross-sectional descriptive study of key academic stakeholders from the 21 countries and 1 territory in the Eastern Mediterranean Council of Optometry (16). Where no optometric institutions were available, officials from the ministries of higher education responded to the questionnaire. Participants completed the Optometry Situational Analysis Questionnaire, adapted to include region-specific questions, which covered the following aspects: institutional profiles, structure of optometric education programmes, graduate numbers, quality assurance practices, and regional and global assistance needs of the respective institutions. The adapted questionnaire was initially piloted among 3 key informants (not included in the main study) for clarity and feasibility, and appropriately edited prior to distribution between August 2021 and January 2022. Data were managed using SPSS version 25 (IBM Corporation, Armonk, NY, USA).

Ethical consideration

Ethical approval (approval number: UKZN 00002594) was obtained from the Biomedical Research and Ethics Committee of University of KwaZulu-Natal. Consenting participants were not personally identified and participation was voluntary.

Results

Data from 19 countries were included in the analysis (86% response rate): Algeria, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Tunisia, United Arab Emirates (UAE), and Yemen. Afghanistan, Pakistan, Somalia, and Syrian Arab Republic did not respond to the survey and were excluded from the analysis. Table 1 shows the population of each country, the number of optometrists, and the optometrist to population ratio.

Table 2 shows the characteristics of programmes offering optometric education in the EMR. Six of the 19 countries (32%) did not offer such programmes. Algeria, Morocco, and Tunisia offered a licence degree, which is an undergraduate programme conducted over 3 academic years. Only Saudi Arabia offered a 6-year Doctor of Optometry programme. All programmes, except those offered in Egypt, were accredited by an accreditation body; mainly the Ministry of Higher Education within the respective country. Morocco had the highest average number of graduates per annum (n = 305), while the lowest was in Yemen (n = 20).

Data related to programme quality audits are highlighted in Table 3. Of the 13 countries that offered an optometry programme, only 7 reported undergoing periodic quality audit. Six countries used external auditing bodies and 1 audit was conducted internally by a faculty committee. None of the countries was audited by an optometry regulatory authority. Three of 7 countries reported programmes being audited every 2–3 years, while the rest were audited every 5 years or more.

Egypt, Iraq, Jordan, Lebanon, Morocco, Yemen, and Tunisia reported offering programmes at World Council of Optometry level 2. These encompassed competencies at level 1 (management and dispensing of ophthalmic lenses, frames, and other devices that correct visual defects) in addition to investigation, examination, measurement, diagnosis, and correction/management of visual defects (17). Algeria, Islamic Republic of Iran, Jordan, Oman, and Palestine had programmes at World Council of Optometry level 3. These included competencies covered in level 2; investigation, examination, and evaluation of the eye and adnexa; and associated systemic factors, to detect, diagnose, and manage disease, enabling licencing in ocular diagnostics. Only Saudi Arabia and Sudan reported offering programmes at level 4, which encompassed level 3 competencies in addition to the use of pharmaceutical agents and other procedures to manage ocular disease, enabling licencing in ocular therapeutics (17).

Discussion

The increasing prevalence of visual impairment caused by uncorrected refractive error and

other ocular conditions (4,5), which could be managed by optometrists at a primary care level (7), means that there is a need for sufficient appropriately qualified optometrists to serve the needs of their respective populations. In the developed countries, there is an average of 1 optometrist to 10 000 persons, while in developing countries, the ratio can be 1 per 600 000 (18). Large differences in optometrist to population ratios were observed across the EMR countries surveyed in this study. Apart from Jordan, Palestine, and Lebanon, all countries had practitioner to population ratios that exceeded the recommendation of the World Health Organization Refractive Error Working Group (18). Morocco and Yemen were of particular concern. They had optometrist to population ratios that would make it impossible to have any positive impact, and, currently, these countries are underserving their respective populations (18).

There is a tendency to suggest that the 3 countries that have the same optometrist to population ratio as in developed countries (18) reduce their graduate output to avoid a potential oversupply of optometrists and resultant school closures because of increasing practitioner unemployment in the coming years. Such observations have been made in countries such as the UK and Australia because of the increased number of schools offering optometry programmes and the resultant increase in number of graduates (19,20). However, Jordan, Lebanon, and Palestine will need to look at the geographic location of the graduates in relation to population needs. The global migrant refugee crisis may have created clusters or regions within countries that have marked population increases, resulting in high practitioner to population ratios. The recommendation is that an eye care human resource task force be constituted to review this issue, to determine whether there is equitable distribution of practitioners among the population, and to adjust university intake to be numerically and geographically equitable in all EMR countries.

It has been argued that there is a need for realignment of health curricula to match the 21st century challenges (21). This is important because there is a need to ensure that the curricula include competencies that are required by the eye care providers. However, as this study did not investigate the competencies within the offered curricula that are needed to complete the eye care team services, it is recommended that further studies investigate such competencies. The burden of ocular diseases causing visual impairment and blindness is of concern to optometrists worldwide. The key to addressing this problem lies in the optometric education sector (14). We found that only Sudan and Saudi Arabia offered optometry programmes at World Council of Optometry competency level 4, similar to programmes offered in the USA, Nigeria, Colombia, Canada, and Australia (13, 14). Consequently, Sudan and Saudi Arabia offered the highest competency standards as they had the most established programmes in the EMR (14,15). In contrast, many countries in the Region offered programmes at levels 1 and 2, which did not meet the minimum competency level for optometric practice. It is important that all new and existing programmes be structured to produce graduates with competency levels 3 and 4.

A regional education review committee may be formed to engage with the outcome competencies of the various academic programmes, and in collaboration with the respective national bodies, redefine sets of outcome competencies to ensure that graduates meet the level 3 and 4 competencies. The countries within the EMR have unique health and sociodemographic profiles; therefore, they could add electives to the core when formulating their curricula.

For practitioners, standardized bridging programmes could be developed to upgrade the competency levels of diploma holders and those who do not meet the minimum optometric competencies. Previous attempts to upgrade the level of education of practitioners were observed in Sudan, where a bridging programme was developed to allow holders of diploma qualifications to attain a bachelor's degree (14). Sudan is currently offering optometry programmes at World Council of Optometry competency level 4, which is an indication of the success of standardized bridging programmes in raising the level of education in a country.

Quality assurance in academia is important to ensure that certain minimum standards are met and that patients ultimately receive the level of care that they deserve (14). Our study found that, as in Africa (10), optometric programmes were challenged with a lack of professional regulatory bodies that promoted and monitored quality in optometric education. Relevant quality assurance processes should ideally include periodic auditing of programme quality by internal institutional and external professional bodies, in addition to accreditation by national higher education authorities (10). Many optometric programmes in the EMR did not have an auditing system, and among those that did, there was variation in the duration of the audits conducted and the bodies that carried out the auditing. None of the programmes was audited by an optometry regulatory body, with the Ministry of Higher Education being the responsible agency in most countries. This is not unique to the EMR, optometry programmes in Africa face the same challenges, with only 1 country conducting internal self-reviews, professional board quality audits, and audits by higher education authorities (10, 14).

The benefit of having a regulatory authority consisting of ocular health professionals, educators, community representatives, and higher education officials cannot be overemphasized. These auditing panels will be able to review the optometric programme and provide feedback to improve overall quality. The initial audits could be designed to be more developmental, providing guidance on strategies for quality improvement. Successful implementation will help promote and foster regional collaboration. It is recommended that the EMR develops a quality assurance framework that will assist new and existing institutions in enhancing the quality of their optometric education programmes.

A limitation to this study was that response rate was 86%, which did not allow for information about optometric education to be obtained from 3 countries within the EMR. A further limitation was that the study did not attempt to investigate the reasons for not having an optometric programme.

Conclusion

This is the first study in the EMR to explore the state of optometric education. Alleviation of the eye care challenges in the EMR requires building human resource capacity to meet population demographics, offering optometric education programmes with inherent quality indicators and updated curricula (10,22,23). The diverse levels of optometric education and the need to strengthen the standards of education regionally suggest that initiatives should be taken towards harmonization of optometric programmes offered within and among the countries in the EMR. This will foster collaboration across institutions and countries within the Region. More importantly, it will ensure that institutions produce graduates with the relevant competencies to meet the eye care challenges that contribute to the unacceptable levels of preventable visual impairment and blindness within the Region.

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Competing interests: None declared.

Analyse de la situation de l'enseignement de l'optométrie dans la Région de la Méditerranée orientale

Résumé

Contexte : Il existe peu de données de recherche concernant la situation de l'enseignement de l'optométrie dans la Région de la Méditerranée orientale.

Objectifs : Examiner la situation de l'enseignement de l'optométrie dans la Région de la Méditerranée orientale et fournir des données probantes aux décideurs politiques et aux parties prenantes.

Méthodes : Vingt-deux intervenants universitaires principaux sélectionnés à dessein dans 21 pays et au sein du Conseil de l'optométrie de la Méditerranée orientale ont rempli un

questionnaire semi-structuré d'analyse de la situation concernant l'état de l'enseignement de l'optométrie dans leurs pays respectifs entre août 2021 et janvier 2022. Les données ont été analysées à l'aide du logiciel SPSS version 25.

Résultats : Des données provenant de 19 (86 %) des 21 pays et d'un territoire ont été incluses dans cette analyse. Huit pays (36,4 %) proposaient des programmes de licence, cinq pays (22,7 %) un diplôme et six pays (27,3 %) n'offraient aucune formation en optométrie. L'Arabie saoudite a proposé un programme de doctorat en optométrie. Les programmes ont été homologués par un un organisme d'accréditation et des audits de qualité ont été menés périodiquement dans sept pays. Le Maroc enregistrait le nombre moyen de diplômés le plus élevé par an (n = 305), tandis que le Yémen n'en comptait que 20.

Conclusion : Les pays de la Région de la Méditerranée orientale diffèrent quant au nombre de programmes d'enseignement de l'optométrie proposés, aux niveaux de compétences pour les programmes et aux systèmes de suivi des normes de qualité. Une collaboration régionale s'avère nécessaire pour harmoniser et améliorer la qualité de l'enseignement de l'optométrie dans la Région de la Méditerranée orientale.

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WHO EMRO | Situation analysis of optometric education in the Eastern Mediterranean Region

: تضمَّن هذا التحليل بيانات متوفرة من 19 بلدًا (86%) من أصل 21 بلدًا وإقليمالنتائ ج
واحد . وتبين أن 8 بلدان (36.4%) توفر برامج للحصول على درجة البكالوريوس، بينما توفر 5
بلدان (22.7%) برامج للحصول على دبلوم ، ولا توفر 6 بلدان (27.3%) أي تعليم في مجال
البصريات . وتوفر المملكة العربية السعودية برنامجًا للحصول على درجة الدكتوراه في
مجال البصريات . وتُعتَمد البرامج من هيئة اعتماد، وتخضع البرامج لمراجعة دورية للجودة
في 7 بلدان . ويحظى المغرب بأعلى متوسط لعدد الخريجين سنويًّا (العدد = 305) ، في حين أن
عدد الخريجين في اليمن لا يتجاوز 20.

: تختلف بلدان إقليم شرق المتوسط في عدد البرامج التعليمية المتوفرة فيالاستنتاجات
مجال البصريات، وكذلك في مستويات كفاءة مناهجها الدراسية، ونُظُمها لرصد معايير
الجودة . وثمة حاجة إلى التعاون الإقليمي لمواءمة جودة التعليم وتحسينها في مجال
البصريات في إقليم شرق المتوسط .

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