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Archana Kumar,[1,2] Hani Atwa,[1,3] Mohamed Shehata,[4,5] Ahmed Al Ansari[1] and Abdelhalim Deifalla [6]

[1]Medical Education Unit; [4]Department of Family and Community Medicine; 6Department of Anatomy, College of Medicine and Medical Sciences, Arabian Gulf University, Manama, Bahrain. 2Department of Physiology, Sri Ramachandra Medical College and Research Institute, Chennai, Tamil Nadu, India (Correspondence to: Archana Kumar: archanaprabukumr@gmail.com). [3]Faculty of Medicine, Suez Canal University, Ismailia, Egypt. [5]Facult y of Medicine, Helwan University, Cairo, Egypt.

Abstract

Background: Faculty development is essential for enhancing medical education. The World Health Organization in 2013, promoted faculty development based on moderate quality of evidence and conditional recommendations.

Aims: To conduct systematic review of faculty development programmes in medical education in the Eastern Mediterranean Region (EMR), during 2013 to 2020.

Methods: A systematic research was conducted in PubMed, Google Scholar, EMBASE and ERIC using appropriate Boolean operators. Articles in English from the EMR, explicitly mentioning “faculty development” in medical education, in the title, abstract or anywhere in the text, during 2013–2020 were included.

Results: Two thousand three hundred and forty-seven (2347) articles were retrieved, of which 54 were considered for further analysis based on Kirkpatrick’s Model for program evaluation. Articles were grouped into 4 themes: evaluation of new interventions (n = 21), evaluation of already implemented interventions (n = 13), needs assessment (n = 16), and recommendations and guidelines (n = 4). It was revealed that 23 studies addressed level 1 (reaction), while 4 studies addressed level 4 (results) of the Kirkpatrick’s Model of program evaluation.

Conclusion: Faculty development should be need-based and provide hands-on training. Longitudinal programmes are recommended for maximum benefits.

Keywords: faculty development, education and training, systematic review, transforming

Citation: Kumar A; Atwa H; Shehata M; Al Ansari A; Deifalla A. Faculty development programmes in medical education in the Eastern Mediterranean Region: a systematic review. East Mediterr Health J. 2022;28(5):362–380. https://doi.org/10.26719/emhj.22.014

Received: 14/03/21; accepted: 13/10/21

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Introduction

It has been documented that almost all countries experience shortages of health professionals accompanied by inadequate skills eventually affecting millions of people without proper access to primary health services (1). The World Health Organization (WHO) has emphasized that health professionals form one of the 6 building blocks of the health care system and therefore issued guidelines exclusively focused on “transforming and scaling up health professionals’ education and training” (2) and urged all countries to strengthen education and training of health professionals to achieve the objective of universal equitable access to good quality health services (2–5).

The WHO has identified 5 critical domains to ensure the provision of rational policies and scientific guidelines for integrating professional development of health professionals’ education and training to achieve responsive health care delivery:

education and training institutions,

accreditation and regulation,

financing and sustainability,

monitoring and evaluating,

governance and planning.

The domain “education and training” is given primary importance with the vision of bringing greater alignment between educational institutions and health care systems (6). Taking into consideration the available scientific literature support and existing policy issues, 12 essential recommendations were put forward (2). These areas were identified by WHO on the basis of 2 parameters, “quality of the evidence supporting these recommendations” and “strength of the recommendation” (Table 1).

Considering the quality of the evidence, level of recommendation and institutional strength, this review focuses on faculty development in medical education in the WHO Eastern Mediterranean Region (EMR).

Globally, many researchers have acknowledged that when faculty members are not properly trained, it not only affects the students’ learning but also the well-being of the larger population, who seek them for their health needs (7).

Education experts recommend a culture of faculty development that fosters the skills of reflective teaching grounded in the observation of student learning through formal and informal opportunities (7). To prevent unexpected misalignment of the faculty development programme with health care delivery needs, several points should be considered before implementation such as recognizing the institutional/administrative culture, conducting needs assessment,

integrating principles of adult learning into the instructional design and so on (8,9). Several systematic reviews have reported either faculty satisfaction or changes in their attitudes, knowledge or skills as a result of participating in the faculty development programme (8).

This review was carried out to capture the scientific literature available in the EMR in terms of faculty development.

Our objective was to conduct a systematic review of interventions, guidelines, needs assessment and evaluation of faculty development in the field of medical education in the Eastern Mediterranean Region during the period 2013–2020.

Methods

Formation of task force group

A task force group of 3 educators from the College of Medicine and Medical Sciences, Arabian Gulf University, was formed. The criteria for selection were:

completion of formal training in medical education (all members of the task force group have PhD in medical education),

proven practical experience in faculty development,

proficiency in educational research methodology.

Development of a conceptual framework

The initial phase of brainstorming of the task force group led to the development of a conceptual framework to guide literature review. This framework recognizes the fact that faculty members of medical education play several roles, of which teaching is inevitable. It underscores the truth that there are multiple factors which influence the teaching ability of the faculty, and that faculty development programmes have been shown to advance the skills of the medical faculty at various levels resulting in different types of outcomes. It was decided to analyse outcomes of these interventions, based on Kirkpatrick's Model of educational outcomes (10), which proposes a practical matrix for this purpose, with 4 levels of outcomes: learners' reaction

(satisfaction/perception towards the educational experience); learning (demonstrable changes in any of the domains of knowledge, attitude and skills); behaviour (application of newly acquired skill in to practice) and results (changes at a higher level such as patient outcome, institutional growth, etc.). It was emphasized that these outcomes may not be hierarchical, and this model represents a holistic and broad evaluation of an educational training programme (8,11).

Design

Based on the literature support (8,12), we decided to focus on the theme “faculty development” (2). We unanimously agreed to include articles which explicitly mentioned “faculty development” in the title, abstract or anywhere in text. All forms of activities (workshops, webinars, fellowship programmes) irrespective of nature of duration or method of implementation, were included.

All articles relating to faculty development published in the field of medical education between 1 January 2013 and 15 November 2020 were included. The literature search was conducted in English, and in-depth review was limited to suitable articles with the full text available in English.

All study designs were included. Pure descriptive studies without a primary focus on faculty development were excluded. Systematic reviews, opinion papers or short communications, and conference presentations were excluded in our study protocol. We included faculty development programmes designed for all faculties, including the basic science and the clinical faculties. Any interventions devised to enhance the teaching effectiveness or learning outcomes in other health care professionals (e.g. dental, nursing, physiotherapy) were excluded from this review.

All 21 countries of the WHO Eastern Mediterranean Region (EMR), Afghanistan, Bahrain, Djibouti, Egypt, Islamic Republic of Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates and Yemen, were included.

Search strategy and sources of papers

The literature search was carried out in 2 major databases, PubMed and Google Scholar. The key words used were “faculty development”, “medical education” and “name” of the EMR country of interest. Filters were used to exclude conference proceedings, dental faculty, nursing faculty and physiotherapy faculty. In addition, we conducted manual searches on the important journals in the field of medical education and the EMR: Eastern Mediterranean Health Journal, Academic Medicine, Medical Teacher, Medical Education, Teaching and Learning in Medicine and the Saudi Journal of Medical Sciences. We hand-searched some of the important

references from the reference lists of popular review articles. We conducted a similar search in EMBASE and ERIC, using the same key words, however, this additional search did not yield any new articles.

Registration in the National Center for Biotechnology Information (Bethesda, Maryland) account was done using the email ID whocccmms@gmail.com, created by the task force group.

A structured search was carried out using appropriate Boolean operators “AND”, “OR” and “NOT”. The search was repeated for all the countries of the WHO Eastern Mediterranean Region. The articles retrieved were stored in individual collections in the National Center for Biotechnology Information for easy referencing and retrieval.

We retrieved 1237 articles from PubMed using the above-mentioned search criteria. A similar search was carried out in Google Scholar and 1110 articles were retrieved.

Selection methods and judgment of quality of manuscripts

The literature search retrieved 2347 abstracts for faculty development in total. A 2-step process was used in the process of selecting articles suitable for review (8). For the first step, the titles of all faculty development studies were screened by 2 authors independently (APK and HA) to extract suitable articles for the next step. This resulted in 139 articles. These were transferred into Excel using a structured format. In the second step, 2 authors (APK and HA) independently evaluated each abstract and determined whether the article met the inclusion criteria. In this stage 85 abstracts were excluded due to reasons such as duplication (35), not falling within the time period 2013–2020 (2), not related to the EMR (5), books not accessible for further review (2), language other than English (2) and faculty development not the core focus of the manuscript (39). Any disagreements in the process of judgment among the reviewers were settled through detailed discussion. Consequently, 54 studies on faculty development were taken forward for further analysis and review (Figure 1).

The selected articles were divided equally between the reviewers (APK and HA) in such a way that each article was reviewed in detail based on an already agreed structured format. Any differences in retrieved data were agreed upon during discussion.

Results

The 54 faculty development articles were grouped based on their content into 4 themes: handling and evaluation of new interventions, description/evaluation of already implemented interventions, description of needs assessment for faculty development programmes, proposed recommendations and guidelines for conducting faculty development programmes.

In theme 1, 21 articles highlighted issues related to planning and implementation of evaluation of new interventions held across 6 countries in the EMR (Table 2) (13–33). The Islamic Republic of Iran (14,18,19,20,26,33) and Saudi Arabia (17,24,25,27,31) had the most studies published, followed equally by Pakistan (15,22,23,32) and Egypt (13,28,29,30). Seven studies were based on different aspects of online tools and related pedagogy (13,21,22,27–31). Other important thrust areas were feedback (15,20), professionalism (24,25), communication skills (16) and aesthetic skills (26). In this category, 7 studies showed level 2, and 5 studies showed level 3 of Kirkpatrick's Model evaluation, which is the maximum when compared to other themes. This category reported level 4 for 2 studies (Table 3).

In theme 2, 13 articles discussed interventions already implemented across 7 countries in the EMR (Table 4) (34–46). Saudi Arabia (37,40,41,46) contributed most in this domain followed equally by Pakistan (34,42), the Islamic Republic of Iran (35,43) and Egypt (44,46). In general, these studies documented a high satisfaction among faculty members towards faculty development. One study focused on online education (34), one was devoted to mentoring (42) while 4 were based on various aspects of assessment (37,38,40,41). In this category, 4 studies showed level 1, and 2 showed level 4 of Kirkpatrick's Model evaluation. Evaluation data were not available for 3 articles under this theme (35,42,45) (Table 3).

In theme 3, 16 articles from 4 countries in the EMR addressed important aspects related to needs assessment for faculty development programmes (Table 5) (47–62). The Islamic Republic of Iran (47,49,51–53,59–62) and Saudi Arabia (48,54,55,57) contributed the most, followed by Pakistan (50,58) and Egypt (56) in discovering the emerging needs for faculty development programmes. In this category, 13 articles exhibited level 1, and one each for leve1 2 and level 3 of Kirkpatrick's Model evaluation (Table 3).

In theme 4, 5 articles proposed recommendations and guidelines for conducting faculty development programmes (Table 6) (1,35,63–65). Around 46% of the faculty development studies (23) in the EMR focused on reaction (satisfaction/perception – level 1 of Kirkpatrick's

Model) whereas only 7% (4) evaluated results (changes in patient outcome, institutional growth, etc. – level 4 of Kirkpatrick's Model). Only 7% (4 out of 54) showed proposed recommendations and guidelines for faculty development.

Discussion

Among other important areas recommended by the WHO, faculty development is considered very critical in health professionals' education. At national and institutional levels, faculty development was attributed to curriculum reforms, institutional accreditation and selection criteria for potential leadership positions (36,37,53).

The findings under evaluation of new faculty development programmes include high levels of faculty participation in virtual classrooms supporting the utility of using online formats as a flexible way of providing faculty development programme, and the need for virtual medical faculty development programmes to provide and boost the technological competencies required to implement effective remote teaching/learning. While the current global environment demands implementation of online and hybrid formats of teaching and learning, certain skills are universal for these processes irrespective of mode of delivery. Needed skills identified for the faculty include provision of feedback, academic reporting and professionalism. Provision of development opportunities for faculty members in the form of teaching support and mentoring were considered important priorities. Facilitating factors for effective implementation of blended learning include institutional preparedness and availability of robust technologies.

The findings for evaluation of new interventions aligned significantly with findings for already implemented interventions. The faculty development programmes which are delivered through information and communication were found to be effective and associated with high levels of satisfaction. However, significant consensus exists on the fact that face-to-face lectures cannot be replaced by online lectures. The findings include the need to expand faculty development programmes to include individualized and specialist programmes. A recommendation emerged to conduct longitudinal programmes with certification and an emphasis on providing a critical portfolio of skills in the context of faculty development programmes. Longitudinal programmes were recommended on the basis of long-lasting benefit in terms of career development and capacity-building (40,43,44,48,51,59), even though "short interactive online workshops" were preferred by a few faculty (56).

Perceived faculty development needs were shown to be affected by accreditation standards, academic reward systems and socioeconomic factors (56). Categories of faculty development needs identified as top priority in the literature were: "Educational research", "leadership and management", "communication" (47,51,60), "improving personal qualities", "providing greater

educational involvement" (48), "classroom management", "teaching-learning strategies" (54), "psychological skills" (49), "technology skills" (52,60,61,62), "curriculum planning" (52,54), "assessment and evaluation" (52,54,60), "scientific writing" (52,60), "quality and accreditation" (54), "identifying the skills needed by students", "maintaining the focus and attention of students"(55), "journal club", "objective structured clinical examination", "ethics in research", "professionalism", "scientific translation"(60) and "feedback and counselling" (61). However, "institutional and research-related aspects" were considered less essential in some studies (48). Suggested mechanisms for addressing these needs include institution-based exchange programmes, training courses, and communities of practice. Faculty willingness to engage in development activities was high.

Well planned faculty development programmes were shown to facilitate community-based education, problem-based learning, integration between basic and clinical sciences, student-centred education, comprehensive evaluation and evidence-based medicine (45). In terms of delivery formats, face-to-face sessions, morning to afternoon schedule (sessions starting in the morning and ending by noon) and blended teaching modules were the preferred logistics for faculty development programmes (52). Availability of resources, dedicated faculty, preparedness of the institution, institutional support, innovative hands-on training, exchanging experience with other universities, timely recognition of faculty, robust technology and establishing communities of practice were seen as facilitating factors for a successful faculty development programme (22,23,50,51). To create a positive climate for the faculty development programme other factors to consider include: "serving personal needs", "facilitating effective pedagogy", "fostering of faculty career development", "providing food and refreshments", "cultural tradition of support" and "grant funding" (46).

Several recommendations and suggestions emerged from the review. Empowerment programmes were recommended in all the areas of need identified to realize better outcomes from the medical education faculty; faculty development programme should not be ad hoc but rather structured, conducted on a regular basis and linked to faculty promotion criteria. Key areas of faculty development programme should include education and training institutions, accreditation, regulation, financing and sustainability, monitoring and evaluating and governance and planning. The programme should be targeting the needs of specific subgroups and should provide a wide range of skills, not just education. Dimensions in faculty development programme should include individual, professional, educational and organizational development. It was recommended to introduce a unified faculty development diploma (48) in addition to modifying the modules/protocols developed by western countries to suit the local culture (16). It is suggested that faculty development should be embedded as an integral component of the ongoing accreditation process of the institution so that it would become a priority for deans and other administrators (67). Faculty development should also be linked to timely recognition like funding, promotion, reward, etc. (68). Incorporation of the opinion of external experts was suggested as a strategy to minimize resistance to faculty development (29).

Contextual issues that surround the evaluation, assessment and implementation of faculty development programmes emerged from this review. Lack of motivation, poor time management, deficiencies in curriculum, malalignment of instruction and assessment, lack of awareness about innovative instruction and assessment tools, lack of feedback, insufficient use of reflection, poor learning environment, and almost no rewards/recognition for excellence in teaching emerged as impediments to faculty development (40,43,44,48,50). The biggest challenge was to continuously assess the emerging needs for targeted training (37). Compulsory participation in faculty development programme was viewed as a highly controversial concept (56).

Limitations documented in many of the studies include self-selection bias, small sample size, non-blinding of the reviewers (15), single university study, absence of control group (19), heterogeneous population, lack of validated questionnaires, self-reporting bias (21), lack of long-term evaluation to study the impact of intervention (28), improper time management and low internet speed (27), and lack of objective assessment and generalizability.

Searching only few databases can be considered a limitation of this study. The search protocol included the words “faculty development”, while ignoring synonyms like “faculty capacity building”, “faculty professional development”, “faculty empowerment” “faculty training” and “continuous professional development”, which could be considered for future studies.

The identified gaps in the literature for future research include, “explore reasons for no/poor publication record in countries with no/low search yield”, “studies with level 4 Kirkpatrick’s Model evaluation”, “longitudinal follow-up with student/patient outcomes”, “locally feasible recommendations/guidelines for level 4 Kirkpatrick’s Model evaluation”, “factors influencing/limiting the participation of faculty in FD”, “FD in online assessment” and “FD in workplace-based assessment”.

Conclusion

This focused literature review may act as a vector to ignite innovative ideas and fuel sustained efforts towards FD in medical education. Faculty development should be coupled with updated needs assessment and hands on training to achieve the goal of Health for All.

Longitudinal high quality research programmes are essential to ascertain the effectiveness of

FDP in improving the competency of medical faculty and students. Future research should also consider studying the impact of FDP on students' learning outcomes as well as patient outcomes.

Funding: None.

Competing interests: None declared.

Programmes de perfectionnement du corps enseignant dans le domaine de l'éducation médicale dans la Région de la Méditerranée orientale : une analyse systématique

Résumé

Contexte : Le perfectionnement du corps enseignant est essentiel pour améliorer l'enseignement de la médecine. En 2013, l'Organisation mondiale de la Santé a encouragé le perfectionnement du corps enseignant fondé sur des bases factuelles de qualité modérée et des recommandations conditionnelles.

Objectifs : Réaliser une analyse systématique du perfectionnement du corps enseignant dans le domaine de l'éducation médicale dans la Région de la Méditerranée orientale, entre 2013 et 2020.

Méthodes : Une recherche systématique a été menée dans PubMed, Google Scholar, EMBASE et ERIC en utilisant les opérateurs booléens appropriés. Des articles en anglais provenant de la Région de la Méditerranée orientale mentionnant explicitement le « perfectionnement du corps enseignant » dans le domaine de l'éducation médicale, dans le titre, le résumé ou à tout autre endroit du texte, pendant la période 2013-2020, ont été inclus.

Résultats : Deux mille trois cent quarante-sept (2347) articles ont été récupérés, dont 54 ont été retenus pour une analyse plus approfondie, sur la base du modèle de Kirkpatrick pour l'évaluation des programmes. Les articles ont été regroupés en quatre thèmes : évaluation de nouvelles interventions (n = 21), évaluation d'interventions déjà mises en œuvre (n = 13), évaluation des besoins (n = 16), recommandations et lignes directrices (n = 4). Il s'est avéré que 23 études ont permis de déterminer le niveau 1 (réaction), tandis que quatre études ont

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exploré le niveau 4 (résultats) du modèle de Kirkpatrick pour l'évaluation des programmes.

Conclusion : Le perfectionnement du corps enseignant devrait être basé sur les besoins et fournir une formation pratique. Des programmes longitudinaux sont recommandés pour obtenir un maximum de bénéfices.

برامج تطوير قدرات أعضاء هيئة التدريس في مجال التعليم الطبي في إقليم شرق المتوسط : استعراض منهجي

أرشانا كومار، هاني عطوة، محمد شحاتة، أحمد الأنصاري، عبد الحليم ضيف الله

الخلاصة :

: يُعدُّ تطوير قدرات أعضاء هيئة التدريس أمرًا ضروريًّا لتعزيز التعليمالخلفية
الطبي . وقد عززت منظمة الصحة العالمية، في عام 2013 ، تطوير قدرات أعضاء هيئة التدريس
استنادا إلى دلائل جودة معتدلة وتوصيات شرطية .

: هدفت هذه الدراسة الى إجراء استعراض منهجي لبرامج تطوير قدرات أعضاء هيئةالأهداف
التدريس في التعليم الطبي في إقليم شرق المتوسط، خلال الفترة من 2013 وحتى 2020.
: أُجري بحث منهجي في قواعد البيانات الطبية : ERIC, EMBASE, Google Scholar, البحث
باللغة مقالات درجتُوأ . مناسبة (بوليانية) منطقية مشغلات باستخدام ، and PubMed
الإنجليزية من إقليم شرق المتوسط، تذكر صراحةً « تطوير قدرات أعضاء هيئة التدريس » في
التعليم الطبي، إما في العنوان، وإما في الخلاصة، وإما في أي مكان داخل النص، خلال
الفترة من 2013 وحتى 2020.

: اسْتُرجع 2347 مقالًا، منها 54 نُظِرَ في إخضاعها لمزيد من التحليل استنادًاالنتائ ج
إلى نموذج كيركباتريك لتقييم البرامج . وجُمعت المقالات تحت 4 مواضيع : تقييم التدخلات
الجديدة (العدد = 21) ، وتقييم التدخلات المنفذة بالفعل (العدد = 13) ، وتقييم
الاحتياجات (العدد = 16) ، والتوصيات والمبادئ التوجيهية (العدد = 4). وتم الكشف عن أن 23
دراسة تناولت المستوى 1 (رد الفعل) ، بينما تناولت 4 دراسات المستوى 4 (النتائج) من نموذج
كيركباتريك لتقييم البرامج .

: ينبغي أن يستند تطوير قدرات أعضاء هيئة التدريس إلى تحديد الاحتياجاتالاستنتاجات
بالإضافة إلى توفير التدريب العملي . ويوصى بتقديم البرامج الطولانية لتحقيق أقصى
الفوائد .

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