




Challenges of Medical Education in Libya: A Viewpoint on the Potential Impact of the 21st Century

Elmahdi A. Elkhammas¹  Arif Al-Areibi² Faten Ben Rajab³ Abdelaziz Arrabti⁴

¹Department of Surgery, Division of Transplantation, The Ohio State University, Columbus, Ohio, United States

²Department of Anesthesia & Perioperative Medicine, Schulich School of Medicine & Dentistry, Western University, Canada

³Department of Pediatrics, Faculty of Medicine, University of Tripoli, Libya

⁴Department of Surgery, Faculty of Medicine, University of Tripoli, Libya

Address for correspondence Elmahdi A. Elkhammas, Department of Surgery, Division of Transplantation, The Ohio State University, Columbus, OH 43210, United States (e-mail: melkhammas@gmail.com).

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Abstract

Traditional medical education is no longer adequate for preparing medical graduates for immediate practice and to make them ready to practice their profession efficiently with quality and citizenship to the health care system. Medical education is changing based on changes in societies, culture, technology, and quality of care. More elderly patients require special attention, technologies require different skills, and patient-centered, evidence-based medicine needs special training. In Libya, an example of a developing country, medical education faces these challenges and many more. It requires ample resources and an adequate number of qualified health care professionals who are highly specialized. Such faculty are up to date to deliver service, teach, and perform quality research. Attention is necessary to improve their medical education system and keep up with the advances and care needed for their citizens. It is possible with more investment in faculty development, collaboration with reputable institutions in developed countries, and use of professional accreditation from international organizations.

Keywords

- ▶ 21st century
- ▶ developing countries
- ▶ education
- ▶ Libya
- ▶ medical education
- ▶ viewpoint

Introduction

Medical education in the past centuries has produced generations of outstanding clinicians, scientists, and educators.¹ The traditional methodology was used to teach students medical knowledge (basic sciences and clinical sciences) and specific skills. However, the medical education world has recently seen its most significant change in 100 years by

implementing the Competency-Based Medical Education (CBME) system to meet the increased complexity of medical education and societal needs.² The medical field has become more complex with older people, technology, multimorbidity, complex medical information, and attention to quality and safety influencing education and practice.^{3,4} Therefore, medical educators and education started facing unique challenges, which led to worldwide calls for reforms, medical

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school curriculum updates, and postgraduate training changes.⁵⁻⁷ Medical education institutions and organizations in developed countries have responded and started reforms at different speeds. Therefore, medical education has undergone significant changes in the current century. A greater emphasis is placed on patient-centered care, and there is a shift toward evidence-based medicine and interdisciplinary collaboration is driving innovations in how doctors are trained. Medical students receive a more comprehensive and integrated education that prepares them to practice medicine in an increasingly complex and rapidly evolving health care landscape.⁶ We briefly state the current issues in general medical education and stress their relevance to developing countries. We used Libya as an example of a developing country because of the authors' familiarity with the medical education in this country. The last co-author is the current Dean of the Faculty of Medicine at the University of Tripoli.

Current Changes

One of the most notable recent changes in medical education has been integrating technology into the classroom and clinical setting.⁸ Students can access many digital resources, from online textbooks and videos to virtual simulations and patient case studies.^{8,9} These resources have enabled a more interactive and personalized learning experience and exposed medical students to the latest advances in medical technology. Furthermore, implementing CBME has considerably increased the number of in-training assessments that require new innovative digital platforms.

Another critical aspect of medical education in the current century is the increasing focus on patient-centered medicine and interdisciplinary collaboration.¹⁰ As medicine has become more complex and multimorbidity is common, medical students must be trained to work for various multidisciplinary teams. Such teams have a range of health care professionals, including nurses, pharmacists, and physical therapists, to provide comprehensive patient care. Teamwork requires a deeper understanding of the social and behavioral determinants of health and the ability to communicate effectively with other health care professionals and patients from diverse backgrounds.

For medicine to become more patient-centered,¹⁰ a greater emphasis should be placed on preparing medical students to listen and understand the needs and perspectives of their patients. Historically, there is a known deficit in teaching and assessing nontechnical skills such as communication, collaboration, professionalism, and leadership in developing countries. Such skills are the backbone of implementing any patient-centered care program. Students require increased focus on communication skills, cultural competency, empathy, patient safety, and quality improvement training.

The current century doctors must know the health care system¹¹ to produce doctors familiar with their health care system and practice with no difficulty. With the rise of globalization, health care professionals must be equipped to handle a broader range of medical conditions and cultural

perspectives. Medical schools are now incorporating training on global health issues into their curricula, including pandemic preparedness, cultural competence, and global health disparities. Such a change in the curriculum helps prepare medical students to practice medicine in an increasingly interconnected world. It addresses the most significant health challenges facing our national and international community.^{12,13}

Medical education must become more inclusive with an increased focus on diversity, equity, and inclusion.¹⁴ Such an inclusive approach includes recruiting a diverse student body and advising training on unconscious bias and culturally sensitive care. By preparing medical students to understand and respond to the needs of diverse patient populations, health care providers can deliver more effective and equitable care.

Medical education should integrate hands-on experience and simulation-based training.¹⁵ Before working with actual patients, medical students can practice clinical skills and procedures in controlled environments, such as simulation centers and high-fidelity mannequins. These changes provide a safe and effective way for students to develop clinical skills and gain experience in various medical scenarios.

One of the most noticeable changes in the current CBME systems is adopting the adult learner concept with an increasing focus on nontechnical skills. These changes have resulted in more stress on ideas such as academic advisors, coaching, mentorship, quality improvement, and patient safety.

The current century has seen a growing interest in alternative forms of medical education, such as online resources, competency-based programs, flipped classrooms, and team-based learning. These programs offer a different way for students to receive their medical education and provide an excellent pathway to becoming a licensed health care provider. These programs also offer a unique opportunity but require good training for faculty to moderate and deliver such education.

Current Issues Facing Libya

The situation is different in Libya, which is an example of a developing country. Medical education faces unique challenges in developing countries like Libya. In addition to the difficulties mentioned earlier, Libya faces many other challenges like limited resources, too many medical schools,^{16,17} crowded classes, shortage of qualified faculty, underfunded medical education, lack of quality research, and restrictive legislation. Medical education in these countries must progress to meet the minimal needs of their populations' health and well-being. The shortage resulted in a gap between the need for society's health care system and the outcome of medical education. The Libyan medical education system has not seen any major update since 1970.¹⁷ Considering the international revolutionary changes mentioned earlier, one can imagine the size of the gap in medical education between these countries. Libya needs more resources to meet the minimum international requirements. The intermittent

inclusion of the third pillar of medical education, health care sciences education, is common in developed countries and almost absent in developing countries and must be addressed.⁵ The need for health care science in the curricula has widened the gap and resulted in graduates needing direction in training and practice.

The critical challenges that medical education in Libya faces today are many. As mentioned in previous reports, there is a need for more funding, better facilities, more qualified faculty, organized training authority, and regular faculty development programs. The lack of such vital components makes it difficult to attract and retain talented faculty, provide adequate training opportunities, and equip students with the necessary skills and knowledge to practice medicine effectively.

The shortage of highly specialized health care professionals, particularly in rural and underserved areas, resulted in poor access to quality medical care for the marginalized and vulnerable populations. To address this issue, medical education in developing countries must focus on developing the skills and knowledge of health care providers who can work in these areas and provide care for the underserved communities.

Medical education in Libya is a prime example of a disabled education system. It faces all the challenges mentioned, and more attention is needed to find scientific solutions. Our unregulated traditional medical education and marginal health care system require urgent attention. There must be a clear solution for medical colleges to carry out their educational mission and create an environment to promote faculty development programs.

Several steps can be taken to improve medical education in developing countries and help them progress and improve their medical knowledge and the health of their citizens. One approach is to strengthen the existing medical education system, for example, by investing in honest evaluation and assessment of the current colleges, improving the curriculum design, and strengthening faculty development programs. Such an investment in evaluation would result in the closure of unqualified schools and center the focus and resources on the good schools. It is essential to invest in faculty development programs and continuing medical education. Another approach is to develop alternative models of medical education that are better suited to the needs and resources of these countries. For example, task-sharing models, which involve training nonphysician health care providers to perform specific medical tasks, can help increase access to care and reduce the burden on overstretched health care systems. Training nurses for certain functions of health care providers can decrease the expenses and increase the affordability of such needed portions for prevention and care.

Another approach is strengthening partnerships between medical schools in developed and developing countries, including collaborations between academic institutions, sharing resources and expertise, and developing joint educational programs. These partnerships help build capacity in medical education in developing countries and expose stu-

dents and faculty to innovative ideas, approaches, and technologies.

Finally, medical education in developing countries must be aligned with the broader health priorities of the region, including incorporating training on the prevention and management of prevalent diseases in the local area and addressing the social and economic determinants of health that impact the local population. By doing so, medical education in developing countries can help build a strong and sustainable health care system that delivers effective care and improves health outcomes for all.

Recommendations

The authors propose the following steps to move medical education in Libya going forward. The government should:

- Collaborate with an independent international organization to evaluate the medical education system and suggest solutions.
- Invest time to solve the issue of too many medical schools with no infrastructure and qualified faculty.
- Focus on a few medical schools and fund them adequately with clear goals of the needed skills of their graduates.
- Rectify the issue of old curricula to decrease the load of sciences and introduce professionalism, ethics, health care system, and current practice.
- Create a functioning medical education administration within the ministry of higher education and scientific research.
- Introduce early exposure to clinical training and provide clinical facilities staffed with teaching faculty.
- Introduce a leadership training program for young faculty to lead curricula revisions, medical college education departments, and monitor the outcome quality.
- To retain Libyan nationals and decrease the brain drain phenomena, create a better environment for faculty members by improving faculty development programs, salaries, and research.
- Improve the medical specialty training and focus on one national specialty training program.

Conclusions

In conclusion, medical education in the current century is being shaped by numerous factors, including technology integration, interdisciplinary collaboration, global health, diversity, equity, inclusion, hands-on experience, simulation-based training, and alternative forms of medical education. These trends reflect a commitment to preparing medical students for the evolving demands of the health care landscape and delivering high-quality, patient-centered care. However, medical education in developing countries faces significant challenges, far more than what is being faced in developed countries. Nevertheless, there are many opportunities to make progress. By designing alternative models of medical education and strengthening partnerships between medical schools in developed regions, these countries can help build a strong and sustainable health care system that can deliver effective care and improve health outcomes for all.

Author Contributions

E.A.E. initiated the idea and wrote the first draft. All the authors contributed equally to the discussion, writing, editing, and the final version of the manuscript.

Compliance with Ethical Principles

Not applicable.

Note

The views expressed in this article reflect the authors' views and do not represent the journal.

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Conflict of Interest

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