How Higher Education Standards set by the National Yemeni Council of Accreditation & Quality Assurance satisfy the Global Standards for Undergraduate, Postgraduate and Continuing Professional Development

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Content Pages

List of Abbreviations

BME	Basic Medical Education
CME/CPD	Continuous Medical Education/ Continuous Professional Development
DORA	Directory of Organisations that Recognize/Accredit Medical Schools
ECFMG	Educational Commission for Foreign Medical Graduates
MH	Ministry of Health
MHE&SR	Ministry of Higher Education and Scientific Research
PG	Postgraduate
PGME	Postgraduate Medical Education
USMLE	United States Medical Licensing Examination

WDMS	World Directory of Medical Schools
WFME	World Federation for Medical Education
Yemeni CA & QA	Yemeni Council of Accreditation & Quality Assurance

Abstract

Introduction: Competent and efficient health workers play an exceptionally important role in the quality of health care system and they should meet high-level standards as graduates. Yemen, a small country in the Eastern Mediterranean region, with six working medical schools indexed in the World Directory of Medical Schools (WDMS), has witnessed, during the last few years, a rapid expansion of educational institutions. The Yemeni government has set the priority of establishing a national accreditation system to control the quality of education. Yemeni Standards for accreditation of higher education were issued in 2013. ***Aims of the study*:** The purpose of this study is to examine how the higher education standards issued by the Yemeni Council of Accreditation & Quality Assurance (CA & QA), have met the Global Standards for basic, postgraduate and continuing medical education/ continuing professional development (CME/CPD). ***Methods***: This study is a qualitative analysis of the content of the Yemeni CA & QA standards for higher education against the Global Standards for basic, postgraduate and CME/CPD, 2015. ***Conclusions and recommendations***: Yemeni Standards have met, to an acceptable level, the Global Standards of physical infrastructure, educational resources, organization and administration, program evaluation and continuous renewal. Further improvement of the standards regarding mission, learning and training outcomes, student and trainee assessment and support as well as the content of the medical educational programmes is recommended. Yemeni Standards for CME/CPD should be prepared and published.

Introduction

Accreditation is a process of deciding whether an institution or a programme is fulfilling the required standards. Based on adherence to specific standards, the institution is added to an official list of schools that provide recognisable medical education. (Chhaparwal et al, 2013).

Accreditation of medical education is a process to guarantee safe and appropriate medical care to patients through endorsing precise learning environment for medical education (Van Zanten et al, 2008). In the eastern Mediterranean region, including Yemen, the medical schools are listed within the World Directory of Medical Schools (WDMS). In 2014 the WDMS replaced the previous Avicenna directory which had existed from 2008 to 2013. Schools are added to this list only by authorization of the relevant government, not by a system of external review (WHO-WFME task Force on accreditation, 2004). The inclusion of any school in this directory does not indicate its recognition or accreditation status. Five Yemeni public (governmental) medical schools and one private school are listed in WDMS.

The Directory of Organizations that Recognize/Accredit medical schools (DORA) is one of the resources developed by the Foundation for Advancement of International Medical Education & Research (FAIMER). It includes the national authorities (bodies) that accredit medical schools in each country. Yemeni Council of Accreditation and Quality Assurance (CA & QA) is not included yet in this directory (Directory of Organizations that Recognize/Accredit medical schools, DORA).

The Yemeni Standards for Academic Accreditation and Quality Assurance of higher education is a newly prepared document. The Yemeni CA & QA has set these standards in 2013. These standards are general for higher education and not specific for medical education. The beginning of the work toward quality assurance standards began in 1998 when the Ministry of Higher Education and Scientific Research (MHE&SR), constructed the basic rules for a quality assurance system and for higher education accreditation. In 2000, MHE&SR started to disseminate the concept of quality assurance in higher education institutions in collaboration with some

organizations such as the international bank. The concept of quality assurance is a new concept in the higher education in Yemen (Haider, 2009) .In 2005, MHE&SR launched a campaign to evaluate the national institutions of higher education in Yemen based on basic quality assurance requirements which were mainly physical requirements, and decided to close some institutions that did not meet these requirements especially those of medical education programmes such as bachelor of Medicine and Surgery and bachelor of Pharmacy.

The Yemeni CA & QA was established in 2009 by the MHE&SR and has defined its goals and aims. Since most Yemeni educational institutions lack simple basis for quality assurance and quality improvement, it was difficult for the Yemeni CA & QA to start a direct approach forcing all educational institutions to fulfil standards for quality assurance and accreditation. Therefore, the CA & QA has engaged with a gradual, (incremental approach), toward the accomplishment of the academic standards by the Yemeni institutions by moving gradually from simple to more complex requirements. There are four levels for quality assurance and academic accreditation, starting from simple toward more specific standards. These are; level one (Beginning), level two (Foundation), level three (Accomplished) and level four (Distinguished).

There is no special work force for accrediting medical education or setting standards for medical education in Yemen. This situation could influence the ultimate goal of medical education, which is improving the national health care quality. Moreover, Yemeni medical schools are facing the common challenge of all regional medical schools, of being influenced by the Educational Commission for Foreign Medical Graduates (ECFMG) announcement. The ECFMG has announced that certification of medical graduates seeking post-graduate training positions in the United Sates will not be offered except if the graduation was from an appropriately accredited medical school, and if the accreditation body was recognized internationally (ECFMG, 2010).

This study will try to investigate the extent to which the national Yemeni Standards of higher education have met the Global Standards for accreditation of medical education and to draw attention to the areas for further development.

Aims of the Study

1. To determine whether the standards of the Yemeni Council of Accreditation & Quality Assurance are in general accordance with the international standards for under graduate, postgraduate medical education and Continuing Medical Education (CME) / Continuing Professional Development (CPD) of medical doctors

2. To clarify how the national Yemeni academic accreditation standards have met the international standards of medical education for under graduate, postgraduate and CME/CPD

3. To analyse how the national standards were modified to suit the local context.

4. To provide a feedback about the areas for further development in the Yemeni national standards for medical education (under, postgraduate & CME/CPD)

Research Question

How do higher education standards set by the National Yemeni Council of Accreditation and Quality Assurance satisfy the Global Standards of Undergraduate Medical Education, Postgraduate Medical Education and Continuing Medical Education / Continuing Professional Development?

Literature Review

Accreditation could be thought of as "a review of an educational programme, conducted by a governmental organisation or a private entity accountable at a governmental level, based on publicised standards and predetermined protocol." (Van Zanten, et al, 2012). According to World Federation for Medical Education (WFME, 2005), accreditation is a "certification of suitability of medical education programmes and the competence of medical school in the delivery of medical education". In addition, accreditation has two aspects: a status and a process. As a status, accredited school has the position of meeting the standards of quality. As a process, the school has to perform a self-study and be prepared for an external evaluating visit (Chhaparwal et al, 2013).

The main goal of accreditation of medical education is to ensure a learning environment suitable to prepare a physician, who can meet the expectations of his/her community through adjusting the medical education to be fit for the health care delivery system (WHO-WFME Task Force on accreditation, 2004). Moreover, regulation and accreditation of medical education enhance trust of the public towards health professionals and enable physicians to study and work according to well-recognized benchmarks and standards and hence, enhancing their confidence. Medical education providers also benefit from the process of accreditation since the process allows for working according to standards and augments their reputation. (Chhaparwal, et al, 2013).

Accreditation of medical education can help improving the quality of health care provided to patients (Van Zanten et al, 2008). The whole process of accreditation and regulation of medical education should result in improving all aspects of health care provided to patients, which includes not only cure of certain illnesses, but also the enhanced well-being of the whole population and responding to the rapidly changing health needs. In a study performed to assess the relationship between the accreditation of a medical school and the performance of the students in the United States Medical Licensing Examination (USMLE), it was found that students from accredited schools have higher first attempt pass rates (Van Zanten, 2015). This study provides modest

support to the role of accreditation of medical schools in improving graduate competences.

Other drivers for the institutions to seek accreditation are the prestigious positions, incentives for students to enrol themselves in accredited schools, ensuring regular monitoring and continuous improvement for the programmes and the augmented chance to draw funds and grants (Cueto et al., 2006).
Awareness to the processes of quality assurance and accreditation of medical education has increased throughout the world due to the sudden upsurge in the number of medical schools (WHO-WFME, 2005). Moreover, globalisation and increased freedom of movement of health professionals worldwide is another important triggering factor (WHO-WFME, 2005). The regulation and accreditation of medical education boost the quality of medical education of those moving professionals by providing standards that ensure the competences of graduates and appraising every medical school against these standards (Hammer et al., 2011).

The WFME, which is not an accrediting body, has set, in collaboration with World Health Organisation (WHO), international standards for medical education. The Global Standards programme has established a set of standards for medical education that could be used as a guiding light for the national agencies to develop their own standards with the purpose of enhancing the quality of medical education. Three sets of standards were prepared for the three levels of medical education, basic, postgraduate and continuing medical education/continuing professional development. Basic medical education standards were categorised into nine areas covering the Mission and Objectives, Educational Programme, Assessment of Students, Students, Academic Staff/faculty, Educational Resources, Programme Evaluation, Governance and Administration and Continuous Renewal (WFME, 2015). Moreover, these standards have two levels of achievement; must level, which stress on the essential requirement, and should level, which describes the desired level. This approach helps the institutions to focus on the essential steps while planning for improvement.

The Guidelines for basic medical education by WHO-WFME (2005) are flexible and acknowledge the local context of each country. They are also applicable for any type

of institutions (governmental or private). The guidelines of WHO-WFME for basic medical education (2005), states that:

"The standards or criteria must be predetermined, agreed upon and made public. The criteria to be used as the basis for the accrediting process – for the self-evaluation, external evaluation, recommendations and final decision on accreditation – must be the WFME Global Standards for quality in basic medical education, with the necessary national and/or regional specifications or a comparable set of standards." Nevertheless, these standards takes into consideration the local context of the higher education and medical education in any region in the world, which is an important feature of accreditation and regulation (Hampton, 2005). The process of accreditation of medical education should offer a base for a quality medical education, which, by no means, should constrain institutions from creating its own system according its context (Hemmer et al, 2011; WFME Recognition of the accreditors, 2013). Another important feature for the process of accreditation is to be as less bureaucratic and rigid as possible (WHO-WFME, 2005 a).

The WHO-WFME has offered different methods of support to medical schools and national accreditation bodies to facilitate establishing national accreditation systems such as, providing annotations and local specifications of standards. External advisors from WFME can help in the external review process, as well as site visits to medical schools by WFME teams (WHO-WFME, 2005 b). Additionally, WFME can also recognize the national accrediting bodies through a set of well defined procedures. This process makes the national medical schools, accredited by the national recognized body, a credible medical school internationally in offering medical education (WFME, Recognition of the Accreditors, 2013)

The situation of Accreditation in Yemen and some developing countries

In the Republic of Yemen, a developing country with six operating medical schools registered in WDMS, there is one official body that accredit the general higher education; the CA & QA. This council is a governmental organisation, established by the MHE&SR. There is no specific body for accreditation of medical education. The Yemeni CA & QA is not included in the directory of Organizations that Recognize /Accredit medical Schools (DORA), which is a data base system established by the FAIMER. This may be because Yemeni CA & QA does not specifically accredit

medical education. The recent age of the council and the fact that no medical schools have undergone accreditation by the council may be other explanations.

Six Yemeni medical schools, five governmental and one private, are included in WDMS. The governmental medical schools included in WDMS are, those of Sanaa University, University of Aden, University of Taez, University of Thamar and Hadramout University (WDMS, 2016). The only private medical school included in the directory is the Faculty of Medicine and Health Sciences at the University of Science and Technology, Sanaa. The two oldest medical schools in Yemen are Sanaa University and University of Aden. All of these medical schools are in a planning phase or preparing their first self-review according to the predetermined standards of the council. These medical schools offer medical programmes leading to the award of Bachelor of Medicine and Surgery. Until the date of this study, there is no established national examination for the graduates from medical schools in Yemen. Every school perform its own final examination (Bachelor examination) at the end of the sixth/fifth year of the programme (personal communication). This may add more load on the Yemeni CA & QA responsibilities in regulating and overseeing medical education to ensure sufficient adherence to quality standards and hence, graduation of efficient physicians.

Although medical education has many issues in common with general higher education such as infrastructure, staffing and libraries, medical education has specific aspects to be regulated. WFME (2013), states that "accreditation system must be medicine-specific or possesses similar characteristics. A general system for all higher education is not necessarily sufficient to assess and ensure quality of medical education and its outcome". This is clearly an important distinction, because there are unique aspects related to medical education that should be addressed such as, professionalism, ethical issues, patient safety, clinical training and clerkship periods. Another difference is that the experts participating in the accreditation procedures should have medical background and an experience as health professionals. A general body for higher education could be re-organized to be suitable for medical education, (WFME, Recognition of the Accreditors, 2013).

In Sudan, for example, the Accreditation Committee of the MOH&SR along with the Sudan Medical Council are the responsible authorities for medical education and health practice. They are adopting WFME Global Standards. A central committee composed of representatives of these bodies has made series of meetings to adapt WFME Global Standards to be suitable for the local context (Hassan & Elzein, 2007). In Egypt, the National Authority for Quality Assurance & Accreditation of Education (NAQAAE) is the governmental agency under the umbrella of the Prime minister of Egypt that oversees the whole process of quality assurance and accreditation of higher education. Although this body is general for higher education, it issued specific set of standards and guidelines for accreditation of medical education, the National Academic Reference Standards (NARS, 2009) for medical programmes. Egypt has developed two processes in the way of accreditation of medical schools. Cairo University, Kasr El Ainy School of Medicine has performed their self-evaluation study according to WFME Global Standards followed in 2004 by the WFME site visit (WFME, 2011).

In a study of accreditation in some developing countries, Cueto et al, (2006) collected data from national accrediting bodies of nine developing countries namely Philippines, Mongolia, India, Argentina, Kenya, Nigeria, Pakistan, Malaysia and South Africa. They concluded that not all these systems are governmental since some systems such as Philippines and Mongolia have private accreditation agencies. Moreover, they concluded that some countries have a voluntary accreditation process such as Malaysia, Philippines and Mongolia. All these countries have either specific national agencies for accrediting medical education or a component inside the general body that is specific for medicine or health profession in general. Most of these countries involved both ministry of health and ministry of education. In Malaysia for example, the Joint Technical Committee on Accreditation includes Ministry of Higher education, Ministry of Health as well as the Malaysian Medical Council. (Cueto et al, 2006).

One important triggering factor for establishing the Yemeni CA & QA is that institutions of higher education in Yemen have failed to respond to the increasing demands of higher education. This situation has led to permitting the private sector to participate in carrying this load, and many private schools started to open their doors

in the Yemeni academic landscape (Haider, 2009; Anaam et al., 2009). This expansion of higher education institutions was not accompanied by a proportionate expansion in the related needed infrastructure components, such as teaching hospitals in the case of medical schools, qualified teaching staff, well-developed programmes and curricula and teaching and assessment methods. This has led to the necessity of establishing a body to regulate both public and private higher education.

In 2009, the MHE&SR launched a project for institutional strengthening of post-secondary school education and training capacity, which was funded by the Netherlands (Haidar, 2009). The council has applied the International Network for Quality Assurance Agencies in Higher Education (INQAAHE) standards. This association was established in 1991, aimed at disseminating the principles of quality assurance in higher education worldwide and proposing guidelines for good practice of quality assurance (Blackmur D, 2008). The accreditation procedures adopted by the Yemeni CA & QA is similar to many countries in the world including preparing self-review by the school, reporting the results of the self- review to the council, site visit by a committee selected by the council and finally deciding about accreditation (Haidar, 2009).

The Yemeni QA & CA mandated the process of self-review and accreditation to all Yemeni medical schools. The consequences of ignoring this process may expose the schools to a penalty. Simultaneously, the Yemeni CA & QA continued to provide different types of support to the medical schools to help them establish and develop an internal quality assurance system as well as performing their self-review. Moreover, the council gave the medical schools a relatively flexible framework of time to achieve their steps of accreditation. This is because of the special situation of accreditation in Yemen in which the culture and awareness to accreditation processes is new. In 2005, MHE&SR launched a campaign to evaluate the national institutions of higher education in Yemen based on basic quality assurance requirements which were mainly physical requirements, and decided to close some private institutions that did not met these requirements.

The accreditation procedures adopted by the Yemeni CA & QA is similar to many countries in the world including preparing self-review by the school, reporting the

results of the self- review to the council, site visit by a committee selected by the council and finally deciding about accreditation.

The Yemeni CA & QA has recognized and accepted the fact that international standards could not be implemented literally without some modifications to suit the local context. (Haidar, 2009). They have adopted the gradual approach with four stages to accreditation, and developed four sets of standards. Beginning level's standards demand the school fulfils the requirement of the Yemeni Universities Construction Law, which are mainly physical requirements related to infrastructure and financial issues. Foundation standards demand that the institution has an active and well-defined internal quality assurance system. Accomplished standards assert that the educational institution fulfils the requirements of the general accreditation (the institutional accreditation) set by the Yemeni CA & QA. The Distinguished level demands that the educational programme fulfils the standards of programme accreditation set by the Yemeni CA & QA. The third and fourth levels are now being merged into one set of standards by the CA & QA authorities.

Up until the writing of this study, no medical educational institution in Yemen has been accredited by the Yemeni CA & QA nor by any other external accrediting agency. Institutions are at the level of preparing the Self-review for one or more of the levels of accreditation. Schools can decide, after consulting the CA & QA, the level at which it will work from the four levels. Schools that pass one level can then work for the next.

Furthermore, there is no special Yemeni work force accrediting medical education or to set standards for medical education. This situation could influence the ultimate goal of medical education, which is improving the national health care quality.

Postgraduate medical education refers to "a period of a specialized medical education taken in defined programme called residency, following the completion of medical school" (Cassie et al., 1999). The United States has two main models for supervising postgraduate medical education. The Canadian model is a multidisciplinary one including all medical and surgical specialities in one body. The other model is the American model, in which different committees oversee postgraduate medical

education, each committee for special speciality (Cassie et al., 1999). Yemeni general standards for postgraduate programmes were published by the CA & QA simultaneously with those of undergraduate medical education. The same incremental approach with four levels included under two stages was also adopted. The law of postgraduate studies in Yemeni universities was announced in 2008. All Yemeni postgraduate programmes (medical and non-medical) are under the evaluation by preparing self-review and no programme is accredited yet.

The mission of the medical school does not end with graduating physicians; rather, schools should take the responsibility of providing continuing medical education to health professionals as a method to improve the community health status and health system (Boellen & Boyer, 2001). Yemeni Standards for CME/CPD are not published yet.

The purpose of this study is to evaluate the Yemeni CA & QA standards for higher education against the Global Standards for medical education and to spot light on the positive areas and those areas in need for further improvement. The results would be important, because it will help in developing the standards of medical education in Yemen as a small step in preparing the way for the potential recognition of the CA & QA by WFME. Recognising the Yemeni CA & QA will be an important step in the way of improving the quality and outcomes of Yemeni medical schools, hence achieving the main goal of medical education, which is improvement of health care for the whole community.

Methodology

Study design: a qualitative research design, study of pre-existing data sets.

The data collection tools were the following documents:

a) Basic medical education, WFME Global Standards for quality improvement, 2015, obtained from the WFME website.

b) Postgraduate medical education, WFME Global Standards for quality improvement, 2015, obtained from the WFME website.

c) Continuing Professional Development for Medical Doctors, WFME Global Standards for Quality improvement, 2015, obtained from the WFME website.

d) Documents of the Yemeni Standards for Quality Assurance and Academic Accreditation released by the Yemeni CA & QA for undergraduate education, level 1, Beginning 2013 obtained from the council. They are not available in the website of the Yemeni CA & QA.

e) Documents of the Yemeni Standards for Quality Assurance and Academic Accreditation released by the Yemeni CA & QA for undergraduate education, level 2, Foundation, 2013 obtained from the council. They are not available in the website of the Yemeni CA & QA.

f) Documents of the Yemeni Standards for Quality Assurance and Academic Accreditation released by the Yemeni CA & QA for postgraduate programmes, 2013 obtained from the council, only one level is issued.

Documents of the Yemeni Standards released by the Yemeni CA & QA for undergraduate and postgraduate higher education, 2013 were carefully analysed. Simultaneously, the Global Standards for basic medical education, postgraduate

medical education and continuing professional development of medical doctors released by WFME, 2015 were studied.

The study was started by reviewing the Global Areas with their subareas and standards, detecting the main content and scope of each area. Then a thorough reading of the Yemeni Standards level 1 & 2 was performed to determine the equivocal areas. The equivocal area is the area in the Yemeni higher education standards that discusses a similar scope and content of one area of the Global Standards.

An analysis then is made, focusing on the standards in each area that cover satisfactorily that scope and content of the Global Standards and highlighting the deficient areas. Yemeni Standards were matched against the Global Standards for the three sets (BME, PGME & CPD) and a percentage was given for the degree the Yemeni Standards have met the Global Standards for each area. This is calculated by dividing the number of fulfilled standards by the number of all standards in the same equivocal area multiplied by 100. If a Global Standard was met from another area, it was also documented and calculated.

Global Standards cover the main content that must be addressed by all medical schools while the detailed contents remain a matter of individual medical schools according to their priorities. Moreover, Global Standards are interested in learning processes and practices adopted by the medical schools to deliver that content. Standards for basic medical education could be used for different purposes such as voluntary self-evaluation by the medical school, external evaluation and peer review and accreditation especially when national authorities used the standards.

WFME Global Standards for basic medical education are organised into 9 areas and 36 subareas with one hundred basic standard and 91quality development standards.
The main areas are; Mission & Outcomes, Educational Programme, Assessment of Students, Students, Academic Staff/faculty, Educational Resources, Programme Evaluation, Governance and Administration and Continuous Renewal.
Basic standard means that the standard must be fulfilled by the medical school. Quality and improvement standard referred to those standards which should be documented if present because of their consensus with best practices.

Yemeni Standards for higher education are Arabic documents; no English version was prepared yet. The meaning of standards was discussed with a colleague with a recognized position at the Yemeni CA & QA to ensure the accuracy of the meanings of Yemeni Standards.

WFME Global Standards for Postgraduate medical education are organised into nine areas: Mission and Outcomes, Training Process, Assessment of Trainees, Trainees, Staffing, Training Settings and Educational Resources, Evaluation of Training Process, Governance and Administration & Continuous Renewal. These main areas include 35 subareas and 144 basic standards.

WFME Global Standards for continuing professional development of medical doctors were structured into 9 areas and 32 subareas. Areas are; Mission and outcomes, Educational programme, Assessment and documentation, the individual doctor, CPD provision, Educational resources, Evaluation of CPD activities, Organization and Continuous renewal. The whole set of standards contains 76 basic standards.

The Yemeni Standards for higher education have four levels.

Level one (Beginning):

These standards represent the minimal required standards needed to be fulfilled by every higher education institution in Yemen. The standards include inputs, processes and outputs general for different specializations.

This level of standards contains five main areas with total 98 basic standards. Currently, Yemeni Quality improvement Standards for each set are not available. The main areas are:

1. Vision, mission, objectives and outcomes
2. Academic structure of programmes
3. Organisational and administrative structure of the institution
4. Infrastructure of the institution
5. Financial resources of the programmes.

Level two (Foundation) standards are related to the presence of active internal quality assurance system in every institution. Composed of five subareas, each one is related to quality assurance standards for one aspect. Level three (Accomplished) standards

demands that the educational institution fulfils the standards of the general institutional accreditation. Level four (Distinguished) standards demands that the educational programme fulfils the international standards of professional programme accreditation.

While writing the results, the Yemeni CA & QA started to merge both level three and four standards in one level. (Oral communication with the head of the council, Feb. 2016). This study will address level one and two.

Since the work involved the first two levels of the Yemeni Standards, Level one, Beginning standards and level two, Foundation standards, the first step was to look in the level one standards followed by level two standards for every Global Standard.
Yemeni Standards, which have satisfied Global Standards, were stated. On the contrary, the major issues of the Global Standards, which have not been satisfied, were also declared and revealed.

The same process was implemented for the three sets of Global Standards, basic medical education, and postgraduate and continuous medical education standards.
If a Yemeni standard has met a Global Quality improvement standard, it was declared.

Results

FIRST: STANDARDS FOR UNDERGRADUATE MEDICAL EDUCATION:

WFME Global Standards for basic medical education, Area 1: Mission and Outcomes:

This area of the Global Standards have four subareas**:** Statement of Mission, which is defined by eight basic standards, Institutional Autonomy and Academic Freedom with two basic standards, Educational Outcomes with eight basic standards and Participation in Formulation of Mission and Outcomes having one basic standard.

Area one in the Yemeni CA & QA standards (level one, Beginning), Mission, Objectives of the Institution and Outcomes of the Academic Programmes, is the equivalent area. It has two subareas and seven standards. (Table 1)

Table (1): Area 1 of the Global Standards for basic medical education and the equivalent area of Yemeni Standards for higher education (level one, Beginning)

Item	Global Standards	Yemeni Standards
Area	Mission and outcomes	Mission, Objectives of the institution and Outcomes of the Academic Programmes
Number of standards	19 (Standards B1.1.1 through B1.4.1)	7 (Standards 1.1.1 through 1.2.3)
subareas	1. Statement of Mission 2. Participation in the formulation of mission	1. Mission & objectives of the educational institution.

	3. Institutional autonomy and academic freedom. 4. Educational Outcomes	2. Outcomes of the academic programmes
Number of Global Standards satisfied by Yemeni Standards	6	
Percent of satisfaction	32 %	

Yemeni higher education standards have satisfied six of the global basic standards as the following:

Yemeni standard (1.1.1) states, "…*each educational institution must have a clear mission and objectives which should be prepared with the participation of different stakeholders and it must be announced inside and outside the institution*".

This has satisfied three standards from the global basic standards, which are (B.1.1.1) (B.1.1.2) and (B1.4.1). Moreover, Yemeni Standards (1.2.1 to 1.2.3) stating;

" ..*Educational programmes must develop well-defined and announced outcomes for each programme, which should be in concordance with the Yemeni higher education's strategy and reflect the mission of the educational institution and the requirements of the profession and specializations. Experienced staff according to each specialization and profession should customise these educational outcomes. The educational outcomes should be included in the course specifications of the curriculum and should be proportionate with the level of the academic programme*".

This has satisfied one more global standard, which is (B 1.3.1).

One Yemeni standard, (5.1.1), under the area, Financial Resources emphasise the importance of financial resources to support the programme. This satisfies the global standard, (B 1.2.2). Yemeni standard, (3.1.2), under the area, Organizational and Administrative structure, states:

"The educational institution must have a competent and effective administration that executes the activities and develop the academic programmes in a highly responsible manner, watching at the same time the national laws" this standard met the global standard, (B 1.2.1).

However, Yemeni Standards did not emphasise specific content of the mission about the aims and educational strategies resulting in a medical doctor. Moreover, appropriate foundation for future postgraduate study, role of the doctor in the health sector, life-long learning, and specific content regarding facing the health needs of the community, aspects of social accountability and institutional autonomy has not been mentioned.

There was no detailed description of the educational outcomes of the medical programme.

WFME Global Standards for basic medical education, Area 2: Educational Programme

This area of the Global Standards includes eight subareas with 19 standards. Yemeni equivalent area, Academic Programme's Structure, includes 5 subareas and 19 standards.
As it is clear in the (Table 2) below, the subareas, Academic Staff and Registration as well as Admission, were included under this area in the Yemeni Standards while it takes distinct areas in the Global Standards.

Table (2): Area 2 of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Educational Programme	Academic Programme's Structure
Number of standards	21 Standards (B.2.1.1) through (B.2.8.1)	19 Standards (2.1.1) through (2.5.2)
subareas	1. Framework of the programme	1. Academic programme

	2. Scientific method. 3. Basic biomedical sciences. 4. Behavioural social sciences, medical ethics and Jurisprudence. 5. Clinical sciences and skills. 6. Programme structure composition and duration 7. Programme Management. 8. Linkage with medical practice and health sector	characteristics 2. Study courses 3. Study system *4. Academic staff* 5. *Admission and registration system*

Number of Global Standards satisfied by the Yemeni Standards	5
Percent of satisfaction	24 %

Yemeni Standards have satisfied clearly Two Global Standards, (B 2.1.1) & (B 2.6.1).

Yemeni standard (2.1.1) states that:

"Every *academic programme must have clear and defined specifications and must be composed of the acknowledged components of academic programmes such as defined credits and courses*"

Yemeni standard, (2.3.2) states: "*...the bachelor programmes duration must be eight semesters or more according to the nature of the programme"*

Moreover, three other Global Standards, (B 2.3.1), (B 2.3.2) & (B 2.5.2) were partially met by the Yemeni Standards, since the subarea, (2.2), of the Yemeni Standards states;

"The educational courses should cover all the educational outcomes of the programme and the courses should contain all required knowledge and skills needed for the specific educational programme" and the Yemeni standard, (2.1.3) has mentioned "*….and the practical training in the professional specializations"*

However, Yemeni Standards did not specify clearly the basic medical sciences nor the clinical sciences required for medical programmes. Moreover, scientific method that should be adopted by the programme such as analytical, critical thinking and evidence-based medicine, preparing the students for life-long learning, teaching medical research methods, teaching medical ethics, jurisprudence as well as the specific content of the basic medical sciences, social sciences and clinical sciences, were also not specified.

Curriculum committee as a tool for managing the programme was not identified in the Yemeni Standards.

WFME Global Standards for basic medical education, Area 3: Assessment of Students

This Global Area contains two subareas, assessment methods and relation between assessment and learning. There are ten basic standards, from (B 3.1.1) through (B 3.2.4)

This area has no definite equivalent area in both levels of the Yemeni Standards. The CA & QA authorities are currently revising level three standards to include these standards.

WFME Global Standards for basic medical education, Area 4: Students

This area includes 4 subareas and 13 standards. The Yemeni Standards have no definite equivocal area. Rather, relevant standards were found under the area two: Academic Programme Structure (Table 3)

Table (3) Area 4 of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Students	No specific area was identified
Number of standards	13	2 (2.5.1), (2.5.2)

	Standards (B4.1.1) through (B 4.4.5)		
subareas	4	1. Admission Policy and selection. 2. Student intake. 3. Student counselling and Support. 4. Student representation.	By itself is a subarea: Admission and Registration System, mentioned in the previous table under the area 2, Academic Programme Structure.
Number of standards satisfied	3		
Percent of satisfaction	23 %		

Three Global Standards were met by the Yemeni Standards. These are (B 4.1.1) and (B 4.2.1). The equivalent Yemeni Standards, (2.5.1 &2.5.2), state that;

".. *Each institution must apply an admission & registration policy with a clearly defined student intake size and selection criteria such as the secondary school marks earned by the students", "the selected students should fulfil selection criteria announced by the specific faculty after a competition process"*.

Moreover, area three in level two Yemeni Standards (Foundation) has a contribution in the issue of student representation. Standard (3.4.9) states:

"*The institution should place a clear policy for the student representation in the programme evaluation activities*". This satisfies to some a degree the global standard (B.4.4.1).

Standards regarding disabled students, transferring students, student academic counselling and support, ensuring participation of students in the curriculum design and evaluation were not covered by level one and two Yemeni Standards.

WFME Global Standards for basic medical education, Area 5: Academic Staff/ Faculty

This area of the Global Standards includes two subareas and eight basic standards. Yemeni Standards, level 1, have mentioned the academic staff as a subarea not as a separate one. It was included within the Academic Programme's Structure, the area discussed above. Moreover, level two Yemeni Standards have an equivalent area with four standards, the Quality of the Academic Staff. (Table 4)

Table (4) Area 5 of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	Global Standards	Yemeni Standards
Area	Academic Staff/ Faculty	This issue represents one subarea included in Academic Programme's Structure area level one. In addition, Level two standards has a separate area, area five, Quality of Academic Staff which include four standards
Number of basic standards	8 Standards (B 5.1.1) through (B 5.2.5)	7 + 4 = 11 Standards (2.4.1) through (2.4.7) level one, and (5.1) through (5.4) of level two.
Subareas	2 1. Recruitment and selection policy. 2. Staff activity and staff development.	By itself, this issue is a subarea in level one standards. Level two standards has a separate area, area five, Quality of Academic Staff which include four standards
Number of standards	3	

satisfied	
Percent of satisfaction	37.5 %

The Yemeni standard (2.4.1) states that: "*The teachers should have at least a doctorate degree in their specialty".* The Yemeni standard (1.4.2) states that:

" *..the educational institution should recruit not less than 30% of the staff in the scientific department while this percentage should reach 70% for the institutions of longer periods of work since the establishment date. The teachers should have at least a doctorate degree in their specialty".*

Moreover, The Yemeni Standard, (2.4.3), states that:

"the *number of full time faculty in the department should not be less than 3, and the institution can also employ part time academic staff, and at least one faculty should be available in each major specialization "* .Also, level 2 standard, (5.2), states that: " *the academic staff member should own a deep knowledge and recognizable skills necessary to deliver the scientific material…*" This partially satisfies one global standard (B 5.1.1).

Moreover, the Yemeni standard (2.4.5) has satisfied one global quality development, (Q 5.2.1). This Yemeni standard states that:

"…the *ratio between the students to the faculty in the applied specializations should not be more than 20:1".*

Level two (Foundation) Yemeni Standards, has partially satisfied one more global basic standard in this area, which is (B5.2.5). The Level 2 Yemeni standard, (5.4.1), states that:

"There should be chances for professional development for the academic staff such as training programmes and workshops"

Yet, Yemeni Standards have focused on the teaching responsibilities of the faculty member, but not on their research responsibilities nor the balance between teaching, research, service functions and clinical services. There is no clear statement ensuring that research activities, clinical services are used in teaching and learning. Moreover, teacher training, support and appraisal issues were not adequately addressed in level one and two Yemeni Standards.

WFME Global Standards for basic medical education, Area 6: Educational Resources:

The global basic standards of this area are 14 under six subareas. The equivalent area in the Yemeni Standards is area number four, the Physical Infrastructure of the Educational Institution (Table 5)

Table (5) Area 6 of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Educational Resources	The Physical Infrastructure of the Academic Institution
Number of standards	15 Standards (B 6.1.1) through (B 6.6.2)	52 Standards (4.1.1) through (4.10.7)
Subareas	1. Physical Facilities. 2. Clinical training resources. 3. Information technology 4. Medical Research and scholarship 5. Educational Expertise 6. Educational Exchanges.	1. Lecture rooms 2. Laboratories 3. Staff offices 4. Library 5. Electronic resources 6. Learning resources 7. Admission and registration office 8. Archives 9. The Health Facility Office 10. Other facilities.
Number of Global Standards satisfied by Yemeni Standards	5	

Percent of satisfaction	33 %

Yemeni Standards have clearly satisfied three global basic standards in this area which are (B 6.1.1), (B 6.1.2), (B 6.3.1) & (B 6.3.2) as well as the quality development standard (Q 6.3.2).

Yemeni standard (4.1.1) states,

"...lecture rooms must be sufficient for the students and should be equipped with the suitable educational resources and lecture rooms should not be overloaded with students". Moreover, standards in this subarea determines a specific space areas for each student which is 1.5 square meter in the lecture room and the whole space area of the lecture room to be not less than 40 square meter.

Yemeni Standards subarea (4.5.1) states,

"*..the educational institution should make available the learning resources necessary to support teaching and research activities, such as, electronic books, journals and the information bank which contains scientific dissertations and published research articles related to the specialization, in addition to the availability of a research engine to support research purposes".* Standards under this subarea necessitate training of the students and researchers to use these resources

The Yemeni standard (4.9.1) states,

"A *health facility such as a centre or a unit should be available in the educational institution. The health facility should be appropriately equipped with instruments, tools and staff as well as sufficient first aid facilities" the standards in this subarea determine specific physical characteristics necessary for this health facility"* .

However, Yemeni Standards did not emphasise the importance of clinical training resources such as, categories of patients, clinical training facilities such as primary, secondary or tertiary level facilities, skill laboratories and other community health settings .It did not stress training supervision. Moreover, issues of educational exchanges and medical research and scholarship were also not considered.

This area of the Global Standards have 4 subareas and 11 standards. There is no equivalent area in level one Yemeni Standards (Beginning). However, it has an equivalent area in level two (Foundation) standards. Area 3 in this set of Yemeni Standards, (Quality of the Academic Programmes) has four standards.

Table (6) Area six of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Programme Evaluation	Level 2. Area 3 ,Quality of the Academic Programmes
Number of standards	10 (B 7.1.1) through (B 7.4.1)	4 (3.1) through (3.4)
Subareas	1. Mechanisms for Programme Monitoring & Evaluation. 2. Teacher & Student Feedback. 3. Performance of students & Graduates. 4. Involvement of Stakeholders	-------
Number of Global Standards satisfied by Yemeni Standards	5	
Percent of satisfaction	50 %	

Yemeni standard, (3.3) states:

"The *educational institution must have a policy to ensure monitoring and regular review of academic programmes to keep it updated and connected to the community needs*". Moreover, standard (3.3) states:

"There *must be a policy to ensure evaluation of the academic programmes including the evaluation of student progress* and a policy to collect feedback from the

stakeholders specially market feedback ". This content could satisfy the Global Standards, (B 7.1.1), (B 7.1.2) (B 7.1.3) & (B 7.4.1).

Yemeni Standards also revealed the importance of the presence of a policy to include students and teachers in the quality control measures of the academic programmes, this will satisfy the global standard, (B 7.2.1)

Yemeni Standards did not recommend that the results of evaluation to influence the curriculum. Analysis of the results of students and graduates were not recommended as part of the programme evaluation.

WFME Global Standards for basic medical education Area 8: Governance and Administration

This area of Global Standards has five subareas and seven standards. The equivalent area in the Yemeni Standards is area three of level one, (Organizational and Administrative structure). This area has two subareas and six standards.

Table (7): Area 8 of the Global Standards for basic medical education and equivalent Yemeni Standards

Item	Global Standards	Yemeni Standards
Area	Governance and Administration	Organizational and Administrative structure
Number of standards	7 (B 8.1.1) through (B 8.5.1)	6 (3.1.1) through (3.2.2)
Subareas	5. Governance. 6. Academic leadership. 7. Educational budget and resource allocation. 8. Administration and management. 9. Interaction with health sector.	1. Governance of the educational institution 2. Governance of Academic and administrative staff

Number of Global Standards satisfied by Yemeni Standards	6 basic & 1 quality improvement
Percent of satisfaction	86 % of the basic standards

Yemeni Standards for higher education has satisfied six of the Global Standards for basic medical education, (B 8.1.1), (B 8.2.1) (B 8.3.1) (B 8.3.2) (B 8.4.1) & (B 8.4.2).

Yemeni higher education standard (3.1.1) states that:

"The *educational institution must have its financial and administrative independence and legal capacity. Regarding the private institutions, separations should be emphasized between the possession and the administration of the institution which should have its independent organizational, academic, administrative and financial structure….".*

Yemeni Standards (3.1.2) states,

" *educational institution must have its effective administration which oversees its activities and academic programmes and responsibly develop it" and (3.1.3) standards states that" the educational institution must have organizational structure proportionate with its size and reflects its goals and philosophy… this organization should contain a detailed job description for every academic and administrative position*"

Standard (3.1.3) states that*" the educational institution must have organizational structure proportionate with its size and reflects its goals and philosophy… this organization should contain a detailed job description for every academic and administrative position*"

Yemeni standard (3.1.4) states that:*" there should be a clear authority and responsibility to oversee and manage the educational process".*

In addition, the quality improvement global standard (Q 8.4.1), which warrants the importance of the presence of an internal system of quality assurance within the educational institution., was met by the Yemeni Standards because level 2 Yemeni

Standards (Foundation) are all about the importance of the presence of an internal quality assurance programmes in every educational institution.

However, The Yemeni Standards did not discuss the interaction with health sector and the engagement of the staff and students in the national health institutions.

WFME Global Standards for basic medical education, Area 9: Continuous Renewal

This area has three basic standards. There are no equivalent standards in level one Yemeni Standards. However, level two (Foundation) Yemeni Standards is composed of seven areas: Quality Assurance Leadership, Quality Improvement Plan, Quality of the Educational Programmes, Quality of the Learning Outcomes & Assessment System, Quality of the Academic Staff, Quality of the Educational Resources and Student Support and Quality of the Information System. There are 24 standards composing this level. All are ensuring the presence of certain mechanisms for quality assurance in different aspects of the educational programme. This set of Yemeni Standards safeguards that every educational institution must have an effective quality assurance system that enables the institution to monitor and evaluate its own performance. It is considered a tool for continual improvement and renewal. Therefore, this Global Area is satisfied 100%.

STANDARDS FOR POSTGRADUATE MEDICAL EDUCATION:

Postgraduate medical education (PGME) could be defined as" the phase in which doctors develop competencies under supervision after the completion of their basic medical qualification" (PGME, WFME Global Standards, 2015). PGME, commonly called graduate medical education in the United States, could be also seen as "a period of specialized medical education taken in a defined programme called residency following the completion of the medical school" (Cassie et al, 1999). Global Standards for PGME do not address PhD programmes. Rather, they are concerned with PGME with programmes in which a theoretical part is included besides the clinical training and which ends by enabling physicians to practice unsupervised in their specialization (Postgraduate medical education, WFME Global Standards, 2015).

PGME, WFME Global Standards for quality improvement, 2015, should be used as a template for the national bodies as a basis for evaluation and accreditation of the PGME programmes. They are composed of nine areas:

Mission and Outcomes,

Educational Programme,

Assessment of Trainees,

Trainees,

Trainers,

Educational Resources,

Programme Evaluation,

Governance and Administration,

Continuous Renewal.

The Yemeni CA & QA standards for PG programmes, 2013, contain five areas. These are:

Mission, Objectives, and Outcomes of the PG programme,

PG Programme Structure,

Organizational and Administrative Structure,

Physical Structure of the Educational Institution, and

Financial Resources of PG programmes and its Administration.

No additional standards for other levels for PG programmes were available at the time this study was conducted.

WFME Global Standards for PG medical education area 1: Mission & Outcomes

This area contains four subareas and four standards. The equivalent area in the Yemeni Standards is area 1, Mission, Objectives & Outcomes. It is composed of two subareas and six standards (Table 8).

Table (8) Area 1 of the Global Standards for PGME and equivalent Yemeni Standards

Item	Global Standards	Yemeni Standards
Area	Mission & Outcomes	Mission , Objectives & Outcomes of PG programmes

Number of standards	25 (B1.1.1) through (B1.4.1)	6 (1.1.1) through (1.2.3) with 19 items within the standard (1.2.3) specifying the outcomes of each level of PG programmes, i.e. diploma, masters,& PhD/ MD.
Subareas	4 1. Mission. 2. Professionalism and Autonomy. 3. Educational outcome 4. Participation of Formulation of mission and outcomes	2 1. Mission and objectives of the PG programmes 2. Outcomes of PG programmes
Number of Global Standards satisfied by Yemeni Standards	9	
Percent of satisfaction	36 %	

The Yemeni Standards for PG programmes has satisfied nine basic Global Standards. Yemeni Standards (1.1.1) has stated:

"The PG programmes must have a clear mission and objectives prepared with the participation of the stakeholders and must be announced inside and outside the institution." This has met the Global Standards (B 1.1.1), (B 1.1.2), (B 1.4.1) & (B1.3.10)

Yemeni standard (1.2.1) states

"The PG programme outcomes must be determined clearly by competent specialized persons in the profession and should reflect the nature of the profession or specialization". Also Yemeni standard for PG programme (1.2.3) states,

"The level of the defined outcomes must reflect the level of the programme as Diploma, Masters or PhD/MD programme. Graduate should communicate effectively within a team, and work professionally in his speciality". This has met the global standard (B 1.1.7), (B 1.1.8) &(B 1.3.1*)*

Yemeni Standard (1.2.3) states, "*at the end of the programme, the graduate should be able to demonstrate his knowledge and skills in his specialization*...) this has met the global standard, (B 1.3.6) & (B 1.3.7).

Global Standards for PGME have highlighted the practical nature of the programmes and underlined the training in many sites of the standards. Rather, Yemeni Standards for PG programmes have accentuated the picture of the programmes as courses and dissertation with no much attention to the practical nature. Moreover, social accountability as well as specific competencies of the specialized doctors, professionalism and professional autonomy, commitment to and acquiring skills of life-long learning, were not well addressed in the Yemeni Standards.

WFME Global Standards for PGME area 2: Educational Programme

This area of the Global Standards is composed of 6 subareas and 35 basic standards. The equivalent area in the Yemeni Standards for PG programmes is area 2 (Academic Structure of the PG Programmes). It is composed of 8 subareas and 22 standards (Table 9)

Table (9): Area 2 of the Global Standards for PG ME and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Educational Programme	Academic structure of the PG programmes
Number of standards	35 (B.2.1.1) through	22 (2.1.1) through (2.8.2)

	(B.2.6.3)	
Subareas	6 1. Framework of the PME Programme. 2. Scientific Method. 3. Programme Content. 4. Programme Structure, Composition and duration. 5. Organization of Education. 6. The Relationship between PME and Service.	8 1. Programme Specifications 2. Educational Courses. 3. Study System. 4. Dissertation Supervision system. 5. Academic staff. 6. Admission & Registration system. 7. Scientific Research. 8. Continuous Evaluation and Renewal.
Number of Global Standards satisfied by Yemeni Standards	5	
Percent of satisfaction	14 %	

It was difficult to find equivalent issues in the Yemeni Standards in this area. The Global Standards have underlined the practice-based nature of the PG programme, This was not clear in the Yemeni Standards. Only fourteen percent of the basic Global Standards were met as the following:

The global standard, (B 2.1.1), was satisfied by Yemeni standard (2.1.1), which states: *"Every PG programme should have definite specifications including the main recognized components of programme specifications*". Another partially fulfilled global standard is (B 2.2.1) since the Yemeni Standards have one subarea which is related to scientific research. The standards in this subarea have emphasised that the educational institution must has policies and priorities for the scientific research but without details about medical research and epidemiology orientation. Two more Global Standards were fulfilled by the Yemeni Standards, these are (B 2.4.1) and (B 2.4.2) since Yemeni Standards (2.2.1) and (2.3.1) have described the overall structure and duration of the PG programme including credit hours assigned for each degree. The global standard, (B 2.5.1), about organization and authorities over the educational programme is satisfied by the Yemeni Standards in other area, Organization and Administrative Structure, discussed below.

Yemeni Standards did not underline important issues such as, building the PG programme on the competences obtained from the BME programme. The practice – based training and the personal participation of the trainee in the clinical service and taking responsibilities independently, mentioning about the learning and instruction methods such as trainee- centred approach, maintaining equality principles, evidence based medicine. Yemeni Standards did not underline also the content of the programme to include basic biomedical and behavioural sciences, medical ethics, patient safety, public health and the interface of complementary medicine. There is no clear emphasis on the relation between training and clinical service.

WFME Global Standards for PGME, area 3: Assessment of Trainees

This area is composed of two subareas: Assessment Methods and Relation between Assessment and Learning. This area has 12 basic standards. There is no equivalent area in the Yemeni Standards level one of PG standards. There are no published standards other than level one at the time of the study.

WFME Global Standards for PGME, area 4: Trainees

This area contains 5 subareas and 26 standards. The equivalent area of the Yemeni Standards is a subarea in the area 2, Academic Structure of the PG Programme. (Table.10) There is no independent area in the Yemeni Standards for the (trainees).

Table (10:) Area 4 of the Global Standards for PGME and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Trainees	Academic structure of the PG programmes
Number of standards	26 (B 4.1.1) through (B 4.5.4)	This rea has 22 , only two standards are relevant, (2.6.1) & (2.6.2)
Subareas	5 1. Admission Policy & selection. 2. Number of Trainees. 3. Trainee Counselling & Support. 4. Trainee representations 5. Working conditions.	8 Only subarea number 6 is relevant 1. Programme specifications 2. Educational Courses. 3. Study system. 4. Dissertation supervision system. 5. Academic staff. *6. Admission & Registration system.* 7. Scientific research. 8. Monitoring and review of PG

	Programmes.
Number of Global Standards satisfied by Yemeni Standards	7
Percent of satisfaction	27 %

Seven Global Standards in this area (27 %) were met. Global Standards, (B 4.1.2) & (B 4.1.3), were met as the following: Yemeni standard (2.6.1) states:

"The *educational institution must develop an admission and registration system which determines the basic degree rates which are allowed to join the PG programmes every year according to the admission plans and programme capacity."*

Yemeni standard (2.6.2) states:

"*Registration to PG programmes must occur at the beginning of the academic year and the capacity should be predetermined*". Moreover, Global Standards (B 4.4.1) through (B 4.4.5) has been met too, because level 2 -Yemeni Standards (Foundation), are general quality measures for both under and postgraduate education

Yemeni Standards did not indicate the relation between the programme mission and the selection process, policies for disabled trainees, transferring trainees, transparency and equity, issues of student support and counselling nor working conditions or trainee representations.

WFME Global Standards for PG medical education, area 5: Trainers

This area in the Global Standards has two subareas and eight standards. The equivalent Yemeni Standards are present under a subarea of the area, (Academic Structure of the PG Programmes) with four standards (Table.11).

Table (11) Area 5 of the Global Standards for PG ME and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Trainers	Academic structure of the PG programmes
Number of standards	8	22, only four standards are specified for staff.
Subareas	2 1. Recruitment and Selection Policy. 2. Trainer Obligations and Trainer development.	8, only number 5 is relevant. 1. Programme specifications 2. Educational Courses. 3. Study system. 4. Dissertation supervision system. *5. Academic staff.* 6. Admission & Registration system. 7. Scientific research. 8. Monitoring and review of the PG programmes
Number of Global Standards satisfied by Yemeni Standards	1	
Percent of satisfaction	12.5 %	

The Yemeni Standards for PG programmes discussed staffing in one subarea under the area 2 with four standards. Yemeni Standard (2.5.1) states:

"The PG programme should have sufficient and qualified teaching staff. They should at least have PhD/MD degrees. Every member should have a specific weekly number of teaching hours. The fulltime members should by no means represent less than 70% of the total staff in the department…) this has satisfied one global standard, (B 5.1.1). Yemeni Standards did not necessitate a policy for recruitment and selection. They just required the institution to have a sufficient number of qualified staff.

WFME Global Standards for PGME, area 6: Educational Resources

This area of the Global Standards has 7 subareas and 19 standards. The equivocal Yemeni Standards are distributed in two areas, area 2, (Academic Structure of the PG Programme) in which subarea 2.7 discusses the scientific research, and area 4, (the Physical Structure of the Educational Institution) (Table 12).

Table (12) Area 6 of the Global Standards for PGME and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Educational Resources	Area 2, Structure of the PG Programmes. Area 4, Physical Structure of the Educational Institution
Number of standards	19 (B 6.1.1) through (B 6.7.2)	Area 2 ,(Academic Structure of the PG programmes) has 22 standards but only <u>three</u> standards are relevant to educational resources, those are about research Area 4, (Physical Structure of the Educational Institution) has 35 standards, from (4.1.1.) through (4.8.4) all of them are relevant to educational resources. Total relevant standards are 37.

Subareas	7		*Subareas of (Physical structure of the educational institution) are 8:*
		1. Physical facilities 2. Learning settings 3. Information Technology. 4. Clinical Teams. 5. Medical research & Scholarship. 6. Educational Expertise 7. Learning in Alternative Settings	1. Lecture rooms 2. Laboratories 3. Offices of Academic and administrative staff. 4. Library 5. Electronic Resources 6. Learning resources 7. Admission & Registration office. 8. Archives.
Number of Global Standards satisfied by Yemeni Standards	6		
Percent of satisfaction	31.5 %		

Six Global Standards, (31.5 %), were met by the relevant Yemeni Standards. The equivalent Yemeni Standards focuses on the physical structure such as of lecture rooms, libraries and laboratories, offices and archives. It is clear that the Yemeni Standards did not underline the practice- based nature of PGME. However, Yemeni Standards have met six global PG standards as following:

Yemeni standard, (4.1.1) states" *lecture rooms must be suitable enough to accommodate students. Lecture rooms must be equipped with needed educational resources*" Moreover, Standards (4.1.2) and (4.1.3) specified certain space area for these rooms. That satisfied the global standard (B 6.1.1) about physical settings. Global Standards, (B 6.1.2) and (B 6.1.3), were also satisfied by the Yemeni PG

standards. Yemeni Standards (4.5.1) through (4.5.5) have asserted the presence of information and communication technology, so, they have met Global Standards (B 6.3.1) & (B 6.3.2) related to information technology. The global standard (B 6.5.1), about medical research, has also been considered in the Yemeni Standards in area two. Standard (2.7. 1) through (2.7.3) required the institution to commit to a clear policy for the procedures of scientific research and to support the collective research projects which address the local problems.

However, Yemeni higher education standards for PG programmes have no statement about clinical settings of training, diversity of patients, clinical teams, educational expertise and training in abroad for the candidates. Moreover, the statement about research in the Yemeni Standards was a broad one rather than being precise for medical research.

WFME Global Standards for PGME, area 7: Programme Evaluation

This area contains 5 subareas and 21 standards. Yemeni Standards had addressed this issue in one subarea with two standards. This subarea is (Monitoring and Review of PG Programmes) under the area two, Academic Structure of PG Programmes, which have been discussed earlier.

Table (13): Area 7 of the Global Standards for PG ME and equivalent Yemeni Standards

Item	Global Standards	Yemeni Standards
Area	Programme Evaluation	Academic Structure of the PG programmes
Number of standards	21	Two standards under one sub area
Subareas	5 1. Mechanism for Programme Monitoring & Evaluation.	One equivalent subarea: Monitoring and review of PG programmes

	2. Trainers and Trainee feedback. 3. Performance of Qualified Doctors. 4. Involvement of stakeholders. 5. Approval of Educational Programmes.
Number of Global Standards satisfied by Yemeni Standards	12
Percent of satisfaction	57 %

Twelve Global Standards were satisfactorily by the Yemeni Standards. Standard (2.8.2) states: *"The educational institution must be responsible for the quality of the performance of the PG programmes and on the continuous monitoring, evaluation and review according to the programme mission and objectives", and* Yemeni standard (2.8.1) states, "*The supervisors must presents regular reports about the candidates regarding their development in their dissertations"*

These two Yemeni Standards have satisfied the Global Standards (B 7.1.1), (B 7.1.2) & (B.7.1.3). Moreover, level two standards (Foundation) in which, area 3, Quality of the Academic Programmes with 4 standards, satisfies the following Global Standards: (B 7.1.11), (B 7.2.1) through (B 7.2.3), (B 7.3.1), (B 7.3.3), (B 7.4.1), (B 7.2.1), (B 7.2.2) & (B 7.2.3)

Nevertheless, Yemeni Standards did not discuss the performance of doctors who has completed the PG programme as a part of the programme evaluation. Also, issues of connecting the programme with the needs of the health system.

WFME Global Standards for PG ME, area 8: Governance and Administration

This area of the Global Standards has five subareas and six basic standards. The main comparable area in the Yemeni Standards for PG programmes is area three, the

Organizational and Administrative Structure, though; some Yemeni Standards in other areas have addressed some issues of governance and administration (Table 14).

Table (14) Area 8 of the Global Standards for PG ME and equivalent Yemeni Standards

Item	**Global Standards**	**Yemeni Standards**
Area	Governance & Administration	Organizational and Administrative Structure.
Number of standards	12 Standards (B 8.1.1) through (B 8.5.1)	7 Standards (3.1.1) through (3.2.3)
Subareas	5 1. Governance 2. Academic leadership 3. Educational Budget and Resource Allocation 4. Administration and Management 5. Requirements and Regulations	2 1. Administration of PG Programmes 2. Academic Autonomy
Number of Global Standards satisfied by Yemeni Standards	10	
Percent of satisfaction	83 %	

Yemeni Standards have satisfied ten global basic standards (83 %) in this area as the following: Yemeni standard (3.1.1) states:

"The educational institution must have a clear policy for PG programmes which reflects the mission and objectives of the institution and the higher education strategies. There must be an effective responsible administration that achieve the development and improvement of the programmes". So this Yemeni standard has satisfied the Global Standards (B .8.1.6), (B 8.4.1) & (B 8.4.2). Also, Yemeni standard (3.2.3) describes responsibility of the scientific departments to oversee academic processes and student assessment) this has satisfied Global Standards (B 8.1.2) & (B 8.1.3).

Yemeni standard, (3.1.4), states*:" the administration of the PG programmes must have sufficient authority to execute policies and procedures*." Moreover, Yemeni standard (3.1.2) states:*" the PG programmes must have an organizational hierarchy that reflects its size and objectives with a clear authority and responsibility for each position in the hierarchy."* Therefore, these standards satisfy the global standard (B 8.2.1) about academic leadership.

Yemeni standard (3.1.3), states *"PG programmes must have an effective administration which implement and develop the programmes with great responsibility according the system and regulations of the PG programmes"* this standard satisfies partially the global standard (B 8.5.1) about requirements and regulations.

Moreover, Yemeni standard ,(2.6.1) ,under the area two, Structure of the PG Programmes, satisfies the global standard (B 8.1.1) since it determines minimum requirement for joining PG programme according to the specificity of each programme, which could be considered as general selection criteria although not specific for medical specializations.

Global Standards (B 8.3.1) & (B 8.3.2) about educational budget and resource allocation were also met under another area in the Yemeni Standards, the area five, Financial Resources and its Administration. This area has four subareas, the resources of the educational institution and its annual budget, the accounting system, Institutional expenses and partnerships with external organizations. There are 13 standards for this area.

This area of the Global Standards has three basic standards. The Yemeni comparable standards are located under the subarea number 8, Monitoring and Review of PG Programmes with two standards, in area two, Academic Structure of PG Programmes. Yemeni standard, (2.8.2) states:

"There must be clear procedures for the regular reviewing and evaluation of the achievement of the objectives and outcomes of the PG programmes". This clearly satisfied the global standard (B 9.0.1). Moreover, level 2 (Foundation) standards have fulfilled another basic standard (B 9.0.2).

STANDARDS OF CONTINUING MEDICAL EDUCATION/ CONTINUING PROFESSIONAL DEVELOPMENT FOR MEDICAL DOCTORS

Continuing Professional Development/ (CPD), is a lifelong process of development and learning for the medical doctor that starts essentially after completing BME and PGME.

Global Standards for CPD is composed of nine areas, and 33 subareas. Areas are: Mission and Outcomes, Educational Programme, Assessment and Documentation, Individual Doctor, CPD Provision, Educational Resources, Evaluation of CPD Activities, Organization and Continuous Renewal. The whole set of standards contains 76 basic standards and 62 quality standards. The Yemeni CA & QA did not publish standards for CPD. The Yemeni CA & QA did not publish a similar set of standards up until the time of this study. The Yemeni Standards for higher education have no equivalent standards in this area.

Discussion

Occurrence of well-defined sets of national standards assessing the quality of medical education delivered by the national medical schools is an important step taken by the national accreditation body towards accreditation of medical education. These sets of standards, as well as the national accreditation system of any country should be medicine- specific or having a similar nature (WFME, accrediting accreditors, recognition process, 2013).

National standards must be built based on the basic principles of the Global Standards of medical education with a considerable area for adaptations according to local context circumstances. Since the Yemeni Standards for accreditation of higher education do not possess that medicine-specific character, at least the standards should meet, to an acceptable degree, the basic Global Standards for medical education. This is what this work is trying to illustrate.

This discussion will go systematically through BME, PGME and CPD/CME standards in sequence followed by overall analysis.

Basic medical education standards

Yemeni Standards for *mission and outcomes* has addressed clearly six (32 %) basic Global Standards in this area. Nevertheless, they lack the stress on special aspects of graduating a medical doctors and his /her role in the society and the national health sector as well as aspects of social accountability.

Although some countries in the Mediterranean region have a general body for accreditation of higher education as in Yemen, they also own another body that is related to the health profession, and ensures its input on the specifications of the standards of accreditation. In Saudi Arabia as an example, the National Commission for Assessment &Academic Accreditation (NCAAA) and the Central Board of Accreditation of Health Care Institutions (CBAHI), both are participating in the process of putting standards for medical education (AL-Shehri & AL-Alwan, 2013).

In Yemen, it seems that other bodies involved with health profession did not have its input on these standards, hence the absence of the medical character and personality in the standards. Another explanation could be that the newly prepared standards for the third level may contain such content although; this level is also a one for general higher education. The WFME, in the accrediting accreditor's document, (2013), has emphasized the impact of local cultural, political, socioeconomic conditions on the specification of standards. So, the presence of more than one level of Yemeni Standards could be perceived as an adaptation to the local context in Yemen.

Yemeni Standards have satisfied about 24% of the Global Standards in the area of *Educational Programme*. Although the basic definitions of the educational programme were met, yet, other important general aspects were absent such as the role of the student in taking his own responsibility in learning, the principle of equality, emphasising critical thinking and the role of the curriculum committee. Other specific aspects of a medical programme such as, specification of the knowledge content, skills and training were not addressed. Although, this could be explained by the general nature of the Yemeni Standards, though, its presence is crucial in the quality of the medical education programmes and their absence could have dangerous consequences on the quality of BME. These issues must be addressed in further development of Yemeni Standards.

In Egypt, for example, a medical education reform has initiated with the support of WHO, to address some concerns in health profession education. One important aim, was to help national accreditation system to guide medical schools meeting the Global Standards of medical education (WHO, 2015).Similarly, Iraqi national accreditation system and the Iraqi MHE&SR as well as MH, have held collaboration with WHO, to strengthen the standards of the national accreditation system to be in harmony with the Global Standards (WHO, 2015). Similar activities may be important for the Yemeni CA & QA and could, if performed, help improve the Yemeni Standards.

Student assessment, a crucial component of the Global Standards for BME, has no equivocal areas in level one or two of the Yemeni Standards. The authorities of the CA & QA are issuing level three currently. Since the Yemeni CA &QA adopt the incremental approach in delivering the standards, it would be beneficial to add the set

of student assessment standards in level one because of its basic importance for the BME programme.

Issues of *Students,* represent a central and essential aspect of any higher education standards especially medical programmes. Poor selection process, for example, could lead to problems in the quantity and quality of graduates. It also could address issues of social justice and fair representation of students (Kumar & Taylor, 2014). Other issues such as student intake, student counselling and student representations in the curriculum development and evaluation are also important. Yemeni Standards have satisfied 23% of the Global Standards in this area, *students*, which is a low fulfilment level. Yemeni Standards did not address student counselling and support clearly. The low teacher / student ratio in the higher education could explain this drawback. It also could be due to the presence of other priorities at this stage of development of the Yemeni CA7 QA such as providing sufficient qualified staff for teaching.

Although there is clear statement about recruitment policy of the *academic staff* in the Yemeni Standards, it is clear that the content of this policy differs from the content of the equivalent Global Standards. Yemeni Standards have satisfied three, (37 %) of the global basic standards. The Global Standards concentrate on issues of balance between the staff in the basic, social sciences and clinical sciences as well as addressing areas of research as an important responsibility of the staff. The Yemeni Standards rather, concentrate on matters of availability and qualifications. Again, it is matter of priorities in the local context in Yemen where the academic programmes lack sufficient staff. Issues of recognition and clinical services of the staff was not discussed in the Yemeni Standards. Nevertheless, Yemeni standard have met one global quality improvement standard. They have determined the specific teacher to student ratio needed in the practical specializations such as medicine. This is may be explained by the shortage of the teaching staff in the academic institutions in Yemen. This measure is considered a crucial one in that it will prevent some private schools from working with insufficient academic staff.

Educational resources are important aspects in the infrastructure of a medical programme to guarantee adequate serving of the curriculum Ericsson and colleagues

(1993), emphasised the role of the training and deliberate practice in medical education. They stated that:

"Deliberate practice requires available time and energy for the individual as well as access to teachers, training material, and training facilities Engagement in deliberate practice is not inherently motivating. Deliberate practice is an effortful activity that can be sustained only for a limited time each day during extended periods without leading to exhaustion".

Resources include physical facilities such as lecture rooms, libraries, laboratories, etc. Clinical training facilities are the most important of these resources, including hospitals, primary health care settings, and skill laboratories.

Yemeni Standards included a major area that discussed educational resources and the infrastructure; it contains 52 standards addressing many details such as lecture rooms, libraries, laboratories, information technology facilities, etc. Nevertheless, clinical training facilities was not identified clearly despite its unique importance in a medical programme depending mainly on training and expert supervision. Yemeni Standards have met five (33 %) of the global basic standards.

As the Global Standards have underlined medical research as a part of the curriculum, the Yemeni Standards did not emphasis this role. This may reflect the local socioeconomic and political situation in Yemen that may hinder such process.

The significance of educational expertise in medical education and its role in curriculum development and improving assessment methods was defined by the Global Standards but not in the Yemeni Standards. Educational exchange is another poorly addressed aspect in the Yemeni Standards. No recommendations were built regarding regional or international exchange of students or staff.

Programme Evaluation is an important component in the Global Standards of BME. It is the process by which the information of a programme is systematically collected for judging about effectiveness of this programme in relation to its mission and outcomes. It differs from monitoring in which data are collected for the intention to ensure that the educational process is in track and do not need any intervention (Leinster & Tekian, 2014).

Yemeni Standards have addressed about 40% of the Global Standards. Level two Yemeni Standards, (Foundation), has seven areas, all are related to issues of quality assurance. Area 3 has addressed important issues of programme evaluation, though, an important concept was missed which is using the results to improve the curriculum. Moreover, purposeful analysis of students as well as graduate's results and performance during the curriculum was not clearly addressed as part of the of the programme evaluation. For more satisfaction of the Global Standards, the area of programme evaluation in the Yemeni Standards need to be more specific and detailed.

Governance and administration is among the well-identified areas in the Yemeni Standards. About 86 % of the Global Standards were met in this area. This reflects the major concern of the Yemeni CA & QA, which is ensuring the minimal required standards for the academic programmes. The Global Standards have defined the governance as the act or structure of governing a medical school. It is related to the policy making and controlling the implementation of the policies. Management is concerned about the implementation of the policies including its organizational and economic implications (WFME Global Standards for quality improvement, BME, 2015). The Yemeni Standards, however, have not demarcated theses definitions.

The Yemeni Standards did not consider the interaction between the medical school and health sector. This reflects deficient concepts of social accountability in the Yemeni Standards, an area that should be improved in the future.

The basic Global Standards of *Continuous Renewal* was completely met by the Yemeni Standards. Level two (Foundation) Yemeni Standards is a 27 standard set which guarantee the presence of an effective internal quality assurance system in every educational institution. This set of standards was built on the light of a deep knowledge of the local Yemeni institutions, in which the concepts of quality assurance, control and improvement are not well understood and recognized.

A study conducted by (Van Zanten, Boulet & Greaves, 2012), concluded that the standards having unanimous agreement by the experts were those related to educational programme, assessment of students, students, educational resources, programme evaluation and governance and administration. Yemeni Standards for higher education had addressed some of these standards to an acceptable degree such as programme evaluation, educational resources, governance and administration.

However, less concentration was laid on other standards such as educational programme, student assessment and students.

Standards of Post graduate medical education

Yemeni CA & QA has published a set of standards for PG higher education programs. The set is composed of 5 areas and 95 standards. Again, standards emphasised clearly on areas of infrastructure, organization, administration, and programme evaluation, which reflect the minimal requirements of the educational programmes at the current situation of higher education in Yemen.

Analysis of standards of *Mission and Outcomes* revealed that Yemeni Standards have satisfied about 36 % of the basic Global Standards of PGME. Some issues were not addressed enough in the Yemeni Standards although they are crucial for the medical PG programmes such as, professionalism and professional autonomy.
As it is annotated by the WFME, PGME Global Standards, 2015, P. 32 :
"Professionalism describes the knowledge, skills, attitudes and behaviors expected by patients and community from individual doctors during the practice of their medical profession and includes skills of lifelong learning and maintenance of competencies, information literacy, ethical behavior, integrity, honesty, altruism, empathy, service to others, adherence to professional codes, justice and respect for others, including consideration of patient safety. The perception of professionalism should reflect any ethical guidance produced by the national medical regulator".
The Yemeni Standards have referred to general professional attitudes of the graduates, but medical professionalism needs to be well defined. In addition, other unique issues of the medical profession must be part of the PGME programmes such as the relation with the national, regional and international health sector, aspects of social accountability, commitment to life-long leaning and continuing professional education.

Educational Programme area in the Global Standards of PGME was unsatisfactorily addressed in the Yemeni Standards. Yemeni Standards have met (five, 14 %) of the basic Global Standards. Although there are 22 standards in the Yemeni PG

programme area, yet, these standards included the general and minimal requirements for any PG programme such as composition and duration, number of credit hours & presence of course descriptions. There were no standards related to the specific domain or specialization of medicine. However, Yemeni CA & QA encourages educational institutions to improve their own programmes by adding contents that support their programmes. Therefore, this area is one of the most areas that need improvement and reform by the Yemeni CA & QA to ensure quality medical education.

*Assessment of Trainee*s, as a systematic data gathering about students' learning, is a crucial aspect in the educational process; it affects students, teachers, curriculum and finally the whole society (Norcini & Troncon, 2013). In addition, assessment of trainees in PGME carries more significance, since it determines the permission of trainees to practice independently. There is no equivalent area in the Yemeni Standards for PG programmes. Rather, area 2, Academic Structure of the PG Programmes, holds a subarea, Dissertation Supervision System, which describes the process of the supervision of dissertations. This reflects the general nature of the PG programmes in the Yemeni higher education with minimal emphasis on the specific aspects of the programmes. Most non-medical Yemeni PG programs depend on courses and dissertation to offer the degrees. Practical nature of the programs are poorly underlined. This issue needs to be addressed for further development.

Only two Yemeni Standards was specified to the *Trainee* area in the PG programmes standards. These two standards discussed mainly general registration and admission issues. It did not specify the selection criteria for any programme. Limited educational resources in Yemen should prioritize the formation of standards for an efficient and strict admission and selection policies to the medical schools.

Yemeni Standards have satisfied one Global Standards (12.5 %) in the area of *Trainers*. Yemeni Standards did not place a staff selection or recruitment policy. They just put the condition of sufficient number of qualified staff to be available in the educational programme. This reflects the policy of the Yemeni CA& QA of ensuring minimal requirements for the educational programmes at the current circumstances.

Again, this area needs further improvement. It should address issues such as the balance between teaching, clinical service and clinical research functions.

Educational Resources is one of the areas discussed in detail by the Yemeni Standards. Haider, (2009, P. 6), stated:

"*Since most higher education institutions in Yemen lack the necessary requirements for Licensing, (because most of them were established before issuing Law No. 13 for year 2005 , that organizes the establishment of Private HEIs), Licensing Requirements that are included in that Decree were included within the proper standards in the proposed Accreditation Standards"*. This explains clearly the situation of higher education institutions in Yemen that have led to adopting minimal requirement by the Yemeni CA & QA in an incremental approach.

Programme Evaluation is an important element of the quality assurance of any educational programme. Its purposes may include programme improvement, administrative regulations and responding to accreditation demands (Leinster & Tekian, 2014). Yemeni Standards have met 12, (51 %) of the basic Global Standards for PGME. This reflects the tendency of the Yemeni Standards to ensure minimal quality requirements of the programmes. Issues related specifically to the medical specialty such as connecting the evaluation with the health sector needs, was not discussed.

Governance & Administration issues were identified and discussed in details in the Yemeni Standards. They have met ten, (83 %) of the basic Global Standards. This reflects the priority of the Yemeni CA & QA to ensure a well organized programmes at level 1 & 2 standards.

Yemeni Standards have satisfied one, (66 %) of the basic global standard in the area of *Continuous Renewal*. Yet again, this reflects the priority of the Yemeni CA &QA in establishing the basic principles of quality assurance in the Yemeni educational institutions. However, the Yemeni Standards did not mention allocated resources for this process.

General characteristics of the Yemeni Standards:

Yemeni CA & QA standards have emphasised the physical infrastructure of the institutions and programmes with 52 standards. This is well-expected and time-honoured approach in a country with low resources such as Yemen, and because many private educational institutions have set their programmes without satisfying minimal requirements.

Less highlighting was placed on the role of the teacher as a researcher in general and on the importance between the balance between his role as a teacher and as a researcher.

Most the areas of Yemeni Standards were easily identified as comparable to areas of the Global Standards. However, some Yemeni Standards were placed in different areas. This required frequent readings for the standards many times to get the similarities. For example, some standards of regulation were put under programme structure headings. Another general note about the Yemeni Standards is its concentration on the physical requirements.

Limitations of the study

The main limitation of this study is that it is an inductive and subjective study as most qualitative studies. Moreover, the study have a limitations in issue of findings relevant Yemeni studies in the same topic, that is, in the issue of the standards of medical education in Yemen, which has its negative effect on the depth and resonance of the discussion.

Suggested further research

Since until the date of delivering this study, the Yemeni CA & QA authorities are still working on merging the third and fourth- level standards, it is recommended that further researches analyse the new level of the Yemeni Standards to complete the picture. Moreover, researches on the current situation of medical education in Yemen is also highly recommended since there is insufficient researches in this topic

Conclusion

- Generally, Yemeni Standards for higher education has met a considerable portion of the basic Global Standards
- No Yemeni CME/CPD standards were published yet.
- Yemeni Standards for higher education have almost the same approach and scope (areas and subareas) as the Global Standards. However, the general principle of writing the standards as two levels must and should, were not followed by the Yemeni Standards. All standards of level one & two are compulsory.
- Areas related to physical infrastructure, educational resources, organization/administration, programme evaluation and continual renewal were well represented in the Yemeni Standards and represents areas of strength.
- Some areas in the Yemeni Standards need further development and review such as, learning outcomes of the educational programmes, social accountability, Student assessment, student support, staff activity and staff development, clinical training resources, aspects of medical research and interaction with the national health sector.

Recommendations

Based on the study, the following recommendations are suggested:

1. Yemeni Standards for continuous medical education/continuing professional development should be prepared and published based on the Global Standards.
2. Constructing a task force for medical education within the Yemeni CA &QA to be responsible for establishing standards for accreditation of medical education in Yemen.
3. The Yemeni Council for Medical specializations and the Ministry of Health should participate in establishing the standards.
4. The above mission should be accomplished in due time to face the challenge of ECFMG announcement.
5. Yemeni CA & QA should communicate to be added to DORA.
6. Yemeni medical schools should be encouraged to make their self-review process based on the Global Standards to detect areas of strength and areas for further development.
7. Yemeni CA & QA should be well represented in the Association of medical education in the Eastern Mediterranean region, (AMEEMR).
8. Partnerships of the Yemeni CA & QA with the regional and international agencies interested in the improvement of medical education is recommended
9. A set of quality improvement standards should be added to the set of the basic standards.

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