

**The Current Status  
Of  
Medical Education  
In  
The Gulf Cooperation Council (GCC) Countries\***

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## **Abstract:**

**Background:** In the last two decades, Medical Education has witnessed a change in curriculum, so as to maintain its efficiency and effectiveness. Considerable curricular changes are underway in many medical colleges worldwide.

**Objective:** To assess the current status of undergraduate curricula, in the medical colleges of Gulf Cooperative Council (GCC) countries, in relation to SPICES (Student-centered, Problem-based, Integrated, Community-based, Elective and Systematic) model.

**Methods:** A structured open-ended data form was used in the collection of information from the appropriate authorities in 30 medical colleges of the GCC countries (Kingdom of Saudi Arabia, Oman, Kuwait, Qatar, Baharin, United Arab Emirates and Yemen) in the year 2005.

**Results:** Out of 30 medical colleges, 13 (43.3%) were located in KSA. The annual intake of students in the year 2005 in these 30 colleges was 3225 of which 64.15% were males. Twelve colleges (40%) were following the traditional curriculum, while the remaining (60%) were following hybrid Problem-based learning (PBL) curricula. Most of the colleges' curricula followed were moving towards **the more desirable side of the SPICES model**. The majority of the traditional colleges were planning to change their curricula to hybrid PBL curricula. Almost all new medical colleges were adopting the hybrid PBL curricula.

**Conclusion:** Despite the diversity in the curricula followed in medical colleges in GCC countries ranging from the traditional to the hybrid PBL, most of these colleges either are following or are moving towards the new trends in medical education curricula.

**Key words:** SPICES Model, Problem-based Learning, GCC countries.

## **Introduction:**

The main mission of medical education is to maintain and improve the quality of health care delivered by doctors to patients. This process is directly related to the quality of medical education, and nowadays there is growing concern among medical educators that conventional modes of teaching medical students neither bring out the right qualities in learners nor imparts a life-long respect for learning (1). In 1899, Sir William Osler (2) realized that the complexity of medicine had already progressed beyond the ability of the teachers to teach everything that students would need to know. Osler recommended abolishing the lecture method of instruction and in this way allow students more time to study on their own.

Recent years have witnessed profound changes in political systems, epidemiological patterns, demographic transition, micro-economic strategies, technological trends as well as health care systems. To cope and confirm with these changes, medical colleges around the world have been increasingly confronted with the challenge of making their curricula more meaningful and relevant to the needs of the day and to produce doctors oriented to the real needs of the community. Many authorities highlighted the need for reorientation of medical education and suggested strategies for directing such changes (3-12). The Edinburgh Declaration of World Federation for Medical Education (WFME) (5) and Tomorrow's Doctors of General Medical Council (GMC) of UK (6-12) outlined a number of specific strategies to guide reform and bring about need-based changes in medical education. The most recent recommendations of the GMC Education Committee were intended to promote a new approach to undergraduate medical education and to give a perspective on its aims, which differ substantially from those of traditional curricula (6) The Edinburgh Declaration, currently translated into all major languages, has been very widely adopted as basis for reform of medical education (13).

Most medical colleges in Asia have traditional, teacher-centered and hospital-based training (14-16). The Arabian Gulf countries (Bahrain, Kuwait, Oman, Qatar, Yemen, United Arab Emirates, and Kingdom of Saudi Arabia), otherwise known as countries of the Gulf Cooperation Council (GCC), are a rapidly developing part of the world. Their total population is about 33.5 million (14). These six countries share cultural, religious and geographic characteristics. Over the past two decades, these countries have experienced significant growth in health care facilities, including new

educational and research institutions. The first medical school, in Saudi Arabia was started in 1969, and in 1970's other schools opened in Bahrain, Kuwait and Yemen, whereas in Oman and UAE joined in mid eighties. In 2002 the first medical college was established in Qatar. Most of these colleges like many similar institutions worldwide apply the Abraham Flexner's report (1910) on North American Medical Schools that defined the vision on medical education. This proposed vision is characterized by a dichotomy between basic and clinical sciences. The basic sciences are termed pre-clinical, which were taught in the first 3 years to be later followed by the clinical phase. Even though the medical education paradigm has evolved over the past so many years, an increasing number of medical schools are working to improve and maintain curriculum, aiming to increase the effectiveness of the process of medical education (17-19). Periodic reviews of medical school curricula were carried out in each medical school, independently, and these efforts have generated useful reforms through the years (20, 21).

Curricular innovations should be implemented in new medical colleges upon their establishment, whereas established medical colleges could implement these innovations in a phased manner. In this respect, **Professor Ronald Harden** highlighted the importance of student-centered learning as being pivotal to the thinking about learning and teaching (22). The SPICES model or elements of it which he has proposed was used as the educational approach in many schools, with a focus on PBL (23-26) and community orientation ( 22,26-28).

The current descriptive study was carried out with one main objective, to assess the current status of under graduate medical education curriculum in the medical schools of GCC countries, in relation to the SPICES model.

### Methods:

A structured data form was sent to all the 30 medical colleges in GCC countries in year 2005, and it has focused on: type of college (government/private), annual intake of students, number of annual graduates, criteria of admission, type of curriculum and status of hot topics in curriculum. The colleges were asked to compose their curriculum with the SPICES model and to record their future plans towards curriculum development.

The filled data form has to be signed by the Dean or Vice-Dean of each one of the designated colleges.

### **SPICES model:**

The following checklist aims at evaluating the present curricula in GCC countries, and it helps to assess the status of current undergraduate curriculum, which is between innovative and traditional curriculum, at each medical school. (table 1)

The SPICES model **leads** to 6 educational strategies which represent a continuum from (i) teacher-centered to student-centered learning, (ii) information gathering to problem-based learning (iii) disciplined-based to integrated learning, (iv) uniform to having electives in addition to a core curriculum, and (v) apprenticeship-based to a systematic approach in curriculum planning and delivery. In addition to the paradigm shift to a **Student-centered, Problem-based and Integrated** curriculum, the SPICES model for curriculum planning also includes a shift from hospital to **Community-based** from a uniform course programme to offering of **Electives**, to further encourage self-directed learning and from a rigid to a more **Systematic** approach in designing and planning the curriculum.

### **Results:**

The response rate (in the form) of (receiving back) the filled data forms, duly signed by the Dean and Vice-dean of the colleges was 80% (24 out of 30). As to the colleges that did not respond the required was obtained by telephone, fax, emails and/or from the websites. Of the 30 medical colleges, 13 (43.3%) were from Kingdom of Saudi Arabia, 9 (30%) were from Yemen, 3 (10%) were from UAE, 2 (6.7%) were from Oman, and 1 each from Kuwait, Bahrain and Qatar. The distribution of type of medical colleges (Table-2) shows there were 21(70%) government colleges and 9 (30%) were private.

The annual intake of students in year 2005 in these colleges was 3225, of which 2069 (64.15%) were males. The number of graduates in the year 2005 was 1787, of which 1121 (62.7%) were males. The access to a medical college in any of the GCC countries, that have high school entry, followed by premed preparation year, except in one college in Kingdom of Saudi Arabia ( King Saud bin Abdulaziz University for Health Sciences). The traditional curriculum was followed in 12 (40%) colleges, whereas 18 (60%) colleges were following hybrid form of problem-based learning curriculum.

Table-3 shows the geographical distribution and type of curriculum across the GCC medical colleges.

When each of the college has tested its curriculum against the SPICES model, the responses of 27 colleges is given in Table-4.

Information gathered through questionnaire, as summarized in Table-4 shows that the curriculum trends appear to move towards integration, PBL and community-oriented medical education. The distribution of the current status of hot topics in the curriculum of 19 colleges is given in Table-5.

Only 19 (63.3%) colleges have responded towards future plan of curriculum development and most had short term plan to develop their curriculum (37%) or to change from traditional to hybrid PBL (26%) (Table-6).

## **Discussion:**

Change in medical education is currently a universal phenomenon. Recent trend in medical education reflects major shifts in educational paradigms arising from reappraisals of the relevance and the effectiveness of traditional medical education in the context of fast changing, complex and ever increasing demands on the health care delivery system, including the changing patterns of disease. It is not surprising to see medical educators continue to evaluate and introduce innovations into their curriculum aiming to achieve appropriate outcomes for their graduates; to enable them to meet the healthcare needs of the society locally and globally (17-21).

The recent study was carried out to gain an understanding of the current nature of the undergraduate medical curriculum in GCC countries. The study results indicate that the current position of under graduate medical education is steadily taking the direction drawn by different medical educators and bodies around the world. (5, 8, 10, 29). This represents a healthy trend towards the evolution of curricula that strive to meet the needs of the local community and at the same time cater for the ever demanding globalization of health care. The results obtained also indicate that much attention has been paid to the local requirements and available resources, in which about (53.3%) of schools were following hybrid PBL teaching method, rather than PBL teaching method. Nowadays, the trend in medical education is towards integrating preclinical courses, and make them student-centered, problem-based, within a system centered curriculum and this approach has been adopted by some of the GCC countries and numerous countries in Asia (30, 31). **However, some of the GCC medical colleges are still suffering from a curriculum based on the traditional lecture method which is not competent enough, and the doctors graduating from these institutions might have the standards which are far from satisfactory, when compared with graduates from medical schools in U.K, U.S.A., and some European countries such as the Netherlands.** Disappointment with

traditional education has arisen because too many students memorize, forget, fail to apply or integrate knowledge and resist further learning's (32) and as a result the traditional curriculum is not well accepted by the students, as it does not prepare doctors to meet the needs of the community, they will be serving. The advantage of integrated curriculum was brought out in a recent study, in which the author concluded that the PBL method improved the students ability of problem solving and their use of the learning resources (33).

The need for greater integration of subjects in the medical curriculum has featured prominently in many reports on medical education including the GPEP report (34), 'Educating Medical Students', the report of ACME-TRI project (35) and Tomorrow's Doctors , the recommendations of General Medical Council in the UK (8). Integrated teaching offers many advantages (22) and may be a key factor in the delivery of an effective educational programmed (36). Debate and discussions on integration, however, are often polarized as some teachers continue arguing as proponents and opponents of integrated teaching. In the SPICES model for educational strategies, integration is represented as a continuum with full integration at one end, discipline-based teaching at other, and with intermediate steps between the two extremes (22). The question to be addressed by both teachers and curriculum designers is not whether they are for or against integration, but rather where on the continuum between the two extremes should they (place) their teaching. The current study responders tried to fit the curriculum followed in various GCC medical schools between the traditional and innovative curriculum. However, the study could not identify the exact reasons why some of these medical schools still follow the traditional method of teaching. One possible reason for maintaining the traditional lecture method in some of the medical schools of GCC countries could be that medical teachers have an inadequate understanding or are unaware of the innovation in medical education which is taking place in recent years.

In conclusion, the result obtained in this study uncovered the diversity in the cuurricula followed in medical school in the GCC countries ranging from the traditional to the innovative hybrid PBL-based. It is for each medical school to determine its own educational goals, design and follow the PBL-based curriculum to fulfill these goals, analyze the context in which the school operates, identify the factors that constrain its operation, and choose the curricular model and teaching and learning methods which

incorporates recent developments in medical education, and also enable it to face future challenges.

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# Revised Manuscript ID 07-417 tables

Table: 1

## INNOVATIVE vs TRADITIONAL CURRICULUM

<b>Innovative curriculum</b>	Where is your curriculum located? Please tick the appropriate. Example:										<b>Traditional curriculum</b>
Student-centered				√							Teacher-centered
Problem-based		√									Subject-based
Integrated	√										Discipline-based
Community-based					√						Hospital-based
Elective			√								Standard program
Systematic		√									Opportunistic

- **Student Centered:** The most important consideration is that students should learn excellently. Teacher convenience and status come second.
- **Problem based:** Students learn to solve problems (clinical and management ones) rather than just memorizing facts.
- **Integrated:** Many subjects are taught together; all those parts which deal with a specific problem. Separate 'subjects' are no longer taught.
- **Community based:** Students learn new knowledge and skills in community settings and not just in large hospitals as in the past.
- **Electives:** The curriculum is not completely fixed; students get opportunities to pursue their individual interests.

**Systematic:** Students learn to manage all important problems, carefully by practical planning. Students are no longer put into the ward (or clinic) and hope for the best!

Table 2. Type of Medical Colleges in GCC countries

Country	Medical Colleges		Total
	Governmental	Private	
Saudi Arabia	12	1	13
Kuwait	1	-	1
Bahrain	1	-	1
Qatar	-	1	1
UAE	1	2	3
Oman	1	1	2
Yemen	5	4	9
<b>Total</b>	<b>21</b>	<b>9</b>	<b>30</b>

Table 3. Undergraduate Curricula in GCC Medical Colleges , 2005

Country	Type of Curriculum		Total
	Traditional	Hybrid PBL	
<b>S.A</b>	<b>7</b>	<b>6</b>	<b>13</b>
<b>Kuwait</b>	<b>1</b>	<b>-</b>	<b>1</b>
<b>Bahrain</b>	<b>-</b>	<b>1</b>	<b>1</b>
<b>Qatar</b>	<b>-</b>	<b>1</b>	<b>1</b>
<b>UAE</b>	<b>1</b>	<b>2</b>	<b>3</b>
<b>Oman</b>	<b>-</b>	<b>2</b>	<b>2</b>
<b>Yemen</b>	<b>3</b>	<b>6</b>	<b>9</b>
<b>Total</b>	<b>12</b>	<b>18</b>	<b>30</b>

**Table 4. Where does GCC Medical Schools located in the SPICES Model? (n=27\*)**

<b>Innovative curricula</b>	<b>← →</b>									<b>Traditional curricula</b>	
	<b>Student-centered</b> 16	2	3	5	6				2		4
<b>Problem-based</b> 16	5	2	6	3					2	9	<b>Subject-based</b> 11
<b>Integrated</b> 16	9	5	2						3	8	<b>Discipline-based</b> 11
<b>Community-based</b> 16		1	4	5	6		5	4	2		<b>Hospital-based</b> 11
<b>Elective</b> 16	2	1	6	3	4			1	4	6	<b>Standard program</b> 11
<b>Systematic</b> 16	5	3	2	6			1	1	5	4	<b>Opportunistic</b> 11

\*Three colleges were not responded to SPICES model

**Table 5. Distribution of responses towards hot topics in the Curriculum ( n = 19).**

<b>Topics</b>	<b>Not included</b>	<b>Separate required course</b>	<b>Part of required course</b>	<b>Separate elective course</b>	<b>Part of elective course</b>
Communication skills	2	6	11	-	-
Evidence-Based Medicine	5	1	13	-	-
Complimentary/ traditional medicine	14	1	13	-	-
Genetic counseling	2	3	14	-	-
Geriatrics	7	1	8	-	-
Health care system	4	3	11	-	-
Medical informatics	6	5	7	-	-
Medical ethics	1	10	8	-	-
Health education	5	-	14	-	-
Research methods	2	7	10	-	-
Nutrition	1	2	16	-	-
Practice management	6	-	11	-	-
Other	2	-	-	-	-
Internet	5	-	-	-	-
Psych.	-	-	-	-	-

**Table. 6 Future Plan of Curriculum Development in GCC Colleges (n= 19)**

<b>Future Plan</b>	<b>No. (%)</b>
No plan to change the curriculum	2 (11)
Short term plan to devp the curr.	7 (37)
short term plan to change from traditional to hybrid form of PBL	5 (26)
long term plan to move towards Innovative curriculum	2 (11)
Other plan	3 (16 )
<b>Total</b>	<b>19 (100%)</b>