

Curriculum for Undergraduate Medical Education in Bangladesh 2012: Reflection of Teachers' & Students' Expectation

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Abstract

Background: Medical education is a dynamic and continuous process. Curriculum for under-graduate medical education in Bangladesh has updated in 2012. Before 2012 it was updated in 2002. **Objective:** To explore the students' and teachers' feedback on the structure and contents of the undergraduate MBBS curriculum 2002 and reflection of their expectation in latest update, undergraduate MBBS curriculum 2012. **Methods:** A total of 845 students and 171 teachers of Rajshahi Medical College and Islamic Bank Medical College, Rajshahi, Bangladesh participated in this study. Students' and teachers' perceptions and suggestions regarding the undergraduate MBBS curriculum 2002 were measured in 2009 before update it by a pretested self-administered questionnaire. Data were analyzed by SPSS for windows. Descriptive analytical techniques involving frequency distribution, computation of percentage etc. were done. **Results:** Of the 845 students and 171 teachers, 404 (47.8%) students and 119 (69.6%) teachers were not in favor of the frame work of Phase II of the curriculum updated in 2002. Majority of them suggested to split the 2 years of phase II into two equal parts, 1 year each. Of the 845 students and 171 teachers, 361 (42.7%) students and 30 (17.5%) teachers perceived that the contents of the curriculum was overloaded. More than 65% of the students and 61.4% of the teachers were not in favor of 6 monthly professional examination scheduled. Majority of them suggested 3 monthly schedule of the professional examination. **Conclusion:** The unmet issues of recent updated undergraduate curriculum, like subject distribution in Phase II and Phase III, content overload and provision of professional examination at the 3 months interval should be considered during the future curriculum review.

Key words: undergraduate medical education curriculum, teachers & students, expectation

Introduction

Change is an inevitable consequence of progress and development. Medical education is a dynamic and continuous process. During the last two decades, many authorities like World Federation for Medical Education (WFME) (The Edinburgh Declaration) and General Medical Council (GMC) (Tomorrow's Doctors) highlighted the need for reorientation of medical education and suggested strategies for such changes.^{1,2} Various innovations and trends which have been under-taken globally as strategies include education for capability to reduce information overload, community oriented medical education, problem based learning, early patient contact and integrated learning.^{2,3}

In the light of the above situation, the preceding under-graduate medical education curriculum in Bangladesh was introduced in 2002. It had 3 segments Phase I (preclinical), Phase II (para-clinical) and Phase III (clinical). During first one & half years (Phase I), students learned about preclinical subjects such as Anatomy, Physiology and Bio-chemistry and introductory chapters of one para-clinical subject, Community Medicine Part I. During next 2 years (Phase II), students learned

about 5 para-clinical subjects such as Pharmacology, Forensic Medicine, Pathology, Microbiology and Community Medicine Part II with their clinical subjects like Medicine, Surgery and Gynaecology & Obstetrics. During this time students were also attached to the wards for their clinical training. In the Phase III (last one & half years), students continued to learn about Medicine, Surgery, Gynaecology & Obstetrics. There are provisions of three professional examinations each at the end of each phase. Each professional examination was held twice a year, within an interval of 6 months. Unsuccessful students of a professional examination had to wait 6 months for their supplementary examination.⁴ In 2012 Bangladesh Medical & Dental Council introduced the current undergraduate MBBS curriculum with some modification of previous one. In present curriculum the total course is divided into four phases. The present course structure is the similar the previous curriculum with some modifications. Major modification are: reduction of Community Medicine Part I teaching hours from 30 hours to 5 hours in phase I, splitting of previous Phase II into equal two phases (Phase II and Phase III) with their subjects and provision of professional examination at the end of each phase.

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The present study has been taken to explore the students' and teachers' feedback on the structure and contents of the undergraduate MBBS curriculum 2002 and reflection of their expectation in updated curriculum 2012. It is believed that this is very much essential for the future curriculum review.

Methods

The study was conducted at Rajshahi Medical College (RMC) and Islamic Bank Medical College (IBMC), Rajshahi, Bangladesh. Data regarding the structure and contents of the undergraduate MBBS curriculum 2002 were collected from the students and teachers of both the institutions during September to November 2009 by a pretested self-administered questionnaire. The questionnaires were distributed to the students of each year at the end of a lecture class and were collected with the responses. Data from the teachers of both the institutions were collected by personal contact at any convenient time. Written informed consent forms were signed by the students and teachers before responding to the questionnaires. The questionnaire was designed to record the perceptions and suggestions of the students and teachers on course structure both time frame and subjects, time of professional examination and content overload of the existing undergraduate medical curriculum (Curriculum 2002) during that time. The perceptions of the teachers and students were measured by a five points Likert scale with the following rating scheme 1-strongly disagree (SDA), 2-disagree(DA), 3-un-decide(UD), 4- agree(A) and 5- strongly agree (SA).

Data were computed and processed using SPSS for windows. During data analysis, the collected data by five points Likert scale were collapsed to a three points scale, Strongly Disagree & Disagree=1, Un-decide=2, and Strongly Agree & Agree=3. Descriptive analytical techniques involving frequency distribution, computation of percentage etc. were done.

Results

All the teachers, 216 (RMC-160 & IBMC-56) and students, 993 (RMC-747 and IBMC-246) of these two institutions were invited to participate in the study. Among them 171 (79.1%) of the teachers and 845 (85.09%) of the students responded. Of the 845 students and 171 teachers, 404 (47.8%) students and 119 (69.6%) teachers were not in favor of the frame work of Phase II of the curriculum 2002 (Table I). Majority of these dissatisfied students and teachers

suggested to the phase II into two equal parts as part I (May be as phase II) & Part II (May be as Phase III), 1 year each (Table II).

Of the 845 students and 171 teachers, 396 (46.9%) students and 119 (69.6%) teachers were not satisfied with the subjects contents of Phase II (Table 1). Of the 396 disagreed students, majority (62.6%) suggested Pharmacology and Community Medicine Part II in Part I/phase II(proposed) and Forensic Medicine, pathology & microbiology in Part II/phase III (Proposed) of Phase II. But more than 80% of the disagreed teachers suggested Pharmacology and Forensic Medicine in Part I/phase II(proposed) and Community Medicine Part II, Pathology & Microbiology in Part II/phase III (Proposed) of Phase II (Table 2).

Table 1 Students' and teachers' opinion on the structure of the present undergraduate medical curriculum. n=845/171^a

Structural Characteristics of the present undergraduate medical curriculum	Disagreed by	
	Students N (%)	Teachers N (%)
Frame work		
Length of the total course (5 years)	51 (6.0)	16 (9.4)
Phase I (1.5 years)	106 (12.5)	64 (37.4)
Phase II (2 years)	404 (47.8)	119 (69.6)
Phase III (1.5 years)	135 (16.0)	62 (36.3)
Course contents		
In Phase I: Anatomy, Physiology, Bio-chemistry & Community Medicine Part I	424 (50.2)	121 (70.8)
In Phase II: Pharmacology, Forensic Medicine, Community Medicine Part II, Pathology & Microbiology	396 (46.9)	119 (69.6)
In Phase III: Medicine, Surgery & Gynaecology & Obstetrics	00 (0.0)	00 (0.0)
Professional examination in the course		
3 Professional examinations, at the end of the each phase	396 (46.9)	119 (69.6)
Number of examination in a year		
2 Professional examinations, six months interval	556 (65.8)	105 (61.4)

^aStudent

^bTeacher

Of the 845 students and 171 teachers, 396 (46.9%) students and 119 (69.6%) teachers were not satisfied with the professional examination schedule of the curriculum 2002 (Table I). All of the students and 98.3% of the teachers, who were not satisfied with the professional examination schedule, suggested to implement 1 extra professional examination at the end of the suggested Part I of Phase II (Table 2).

Of the 845 students and 171 teachers, 556 (65.8%) students and 105 (61.4%) teachers were not satisfied with the existing professional examinations schedule i.e. twice in a year, after 6 months interval (Table 1). Majority of them suggested four professional examination in a year i.e. 3 months interval (Table 2).

Table 2 Suggestions of the disagreed students and teachers on the structure of the present undergraduate medical curriculum.

Suggestion	Suggested by	
	Student N(%)	Teacher N(%)
Regarding frame work		
<i>Length of the total course</i> n = 517/16 ^a		
Extension of the course to 6 years	51 (100.0)	16 (100.0)
<i>Phase I</i> n = 106/62 ^b		
Extension of the phase to 2 years	106 (100.0)	62 (96.9)
Split the phase into Part I (1 year) and Part II (1.5 years)	00 (0.0)	2 (3.1)
<i>Phase II</i> n = 404/119 ^b		
Contraction of the phase to 1.5 years	8 (2.0)	00 (0.0)
Split the phase into Part I (1 year) and Part II (1 year)	369 (91.3)	119 (100.0)
Split the phase into Part I (1.5 years) and Part II (1 year)	21 (5.2)	00 (0.0)
Split the phase into Part I (1.5 years) and Part II (1.5 years)	4 (1.0)	00 (0.0)
Split the phase into Part I (2 years) and Part II (1 year)	2 (0.5)	00 (0.0)
<i>Phase III</i> n = 135/62 ^b		
Contraction of the phase to 1 year	82 (60.7)	48 (77.4)
Extension of the phase to 2 years	53 (39.3)	14 (22.6)
Regarding course contents		
<i>Phase I</i> n = 424/121 ^b		
Anatomy, Physiology & Bio-chemistry	424 (100.0)	119 (98.3)
Anatomy & Physiology in Part I and, Bio-chemistry and Pharmacology in Part II	00 (0.0)	2 (1.7)
<i>Phase II</i> n = 396/119 ^b		
Pharmacology & Community Medicine in Part I and, Forensic Medicine, Pathology & Microbiology in Part II	248 (62.6)	14 (11.7)
Pharmacology, Forensic Medicine & Community Medicine in Part I and Pathology & Microbiology in Part II	47 (11.9)	00 (0.0)
Pharmacology & Forensic Medicine in Part I and Community Medicine, Pathology & Microbiology in Part II	36 (9.1)	97 (81.5)
Forensic Medicine, Pathology & Microbiology in Part I and Pharmacology & Community Medicine in Part II	33 (8.3)	2 (1.7)
Pharmacology, Forensic Medicine & Microbiology in Part I and Community Medicine & Pathology in Part II	18 (4.5)	2 (1.7)
Pharmacology, Pathology & Microbiology in Part I and Forensic Medicine & Community Medicine in Part II	9 (2.3)	2 (1.7)
Forensic Medicine & Community Medicine in Part I and Pharmacology, Pathology & Microbiology in Part II	5 (1.3)	00 (0.0)
Forensic Medicine & Community Medicine in Part I and Pathology & Microbiology in Part II	00 (0.0)	2 (1.7)
Regarding professional examination n = 396/119 ^b		
4 professional examinations, each at the end of Phase I, Part I & part II of Phase II and Phase III respectively	396 (100.0)	117 (98.3)
5 professional examinations, each at the end of Part I & part II of Phase I, Part I & part II of Phase II and Phase III respectively	00 (0.0)	2 (1.7)
Regarding repeat (supplementary) professional examinations n = 556/105 ^a		
After 2 months of previous professional examination	79 (12.6)	19 (18.1)
After 3 months of previous professional examination	334 (60.1)	61 (58.1)
After 4 months of previous professional examination	152 (27.3)	25 (23.8)

^aStudent

^bTeacher

Of the 845 students and 171 teachers, 361 (42.7%) students and 30 (17.55) teachers perceived that the under graduate medical curriculum was content overloaded. More than 50.% of the students and 70.8% of the teachers were dissatisfied with the subjects contained in Phase I of the curriculum 2002 (Table 1). Among them all the students and 98.3% of the teachers suggested to exclude Community Medicine Part I from Phase I (Table 2).

Discussion

The length of the undergraduate medical course varies from 4-6 years in different countries though preadmission educational level of the students are very similar. It is 5 years in most of the medical schools in UK and Australia. In US and Canada the standard undergraduate medical curriculum is 4 years. In Germany it is 6 years.⁵ The medical schools in Bangladesh traditionally follow the British medical education system and offer 5 years undergraduate medical course leading to the award of MBBS (Bachelor of medicine and bachelor of Surgery).⁶ The present study findings suggest that most of the students and teachers are in favor of the present length of undergraduate medical education in Bangladesh. It is also reflected in present curriculum.

In the Undergraduate MBBS Medical Education Curriculum 2002 in Bangladesh, Phase-I (preclinical) is 1.5 years, it was 2 years in previous curriculums before 2002.⁷ Due to shortening of the Phase I, students get opportunity to early clinical exposure in Phase II. This early clinical exposure of the students is consistent to the recommendation of Tomorrow's Doctors of the General Medical Council (GMC) of UK.² Most of the medical schools in the different countries of the world like India, UK also have reduced the duration of the preclinical phase of their undergraduate medical curriculum to 1 year by discarding the unnecessary scientific knowledge irrelevant to clinical practice from the curriculum contents in basic subjects.^{8,9} They teach the students

only the basic principles of preclinical subjects in phase I. They teach preclinical subjects further in diluted form by integrated organ/system based approach with clinical subjects in the subsequent phases. Most of the students and teachers in the present study are in favor of 1.5 year as the length of the phase I. This is reflected in newly introduced curriculum (Undergraduate MBBS curriculum 2012), the length of the phase I is remained unchanged. But a considerable proportion of the participants specially teachers are not satisfied with it and advised to extend it to 2 years. A possible explanation for this findings is that vertical integration between basics and clinical subjects is very poor, it is nearly absent in Bangladesh.⁶ So the shortening of the Phase I aggravated the information overloaded per unit of time. Additionally many medical teachers of basic subjects believe that the claim continuous teaching of the basic subjects specially anatomy through out the undergraduate medical curriculum is not true.¹⁰

Adoption of community orientation in medical education has potential benefits for the students, the medical schools and also for the community.¹¹ Community oriented medical education is one of the trends during the last few decades in medical education. As a strategy of community oriented medical education most of the medical schools of the world including Bangladesh introduced community medicine from first year to fifth year in their undergraduate medical curriculum. But in this study majority of the students and teachers suggested to exclude the community medicine Part I from Phase I. This students' and teachers' expectation is reflected in the present curriculum, only five teaching hours is allocated for the community medicine Part I in phase I. Though it is conflicting with the recommendation of Tomorrow's Doctors of the General Medical Council (GMC) of UK.² In the curriculum 2002, the duration of the Phase I was reduced from 2 to 1.5 years, but the contents of the subjects remain same as before. The shortening of the Phase I aggravated the information overloaded per unit of time. This may be possible reason of this type of students' and teachers' suggestion.

The study findings suggested that splitting Phase II into two separate phases of equal duration (1 year) by the subjects and introduction of 1 extra professional examination at the end of the first part is the key solution of the students and teachers disappointment with existing frame work and subjects contents of Phase II, and existing

professional examination schedule. A possible explanation for this findings is that students may feel discomfort, anxiety, tension due to load of 5 subjects at a time. It keeps students busy all year round with the same level of burden instead of the piling up of work at the end of the year. Pakistan and India follow conventional undergraduate medical curriculum. They paraclinical phase (phase II) is divided into two parts and the subjects were assessed by two separate professional examinations, like Pharmacology, Forensic Medicine and Microbiology by 2nd professional examination at the end of the 3rd year, and Community Medicine and Pathology by 3rd professional examination at the end of 4th year,¹² which was suggested by most of the students and teachers in this study. In present curriculum there is partial reflection of students' and teachers expectation. Students' and teachers' expectations regarding the splitting of Phase II and provision of professional examination are reflected in present curriculum. But the subject distribution in the splitting parts of the previous Phase II are not consistent with the students' and teachers' expectations. Subject distribution in the splitting parts of Phase II in present curriculum was suggested only few students in this study. And none of the teachers suggested this type of subject distribution. However, It should be considered in future curriculum review.

The perception toward the curriculum 2002 as overloaded among the students was remarkably higher (42.7% vs 17.5%) than that was among the teachers. It may be due to hidden curriculum. Because many medical teachers of basic subjects believe that detail basic medical sciences knowledge is needed for becoming a good doctor, and clinicians during clinical posting also expect their students' strong prior knowledge of basic medical sciences. However, the study findings suggests that definitely there is a overloading of the undergraduate medical curriculum in Bangladesh. Studies¹³⁻¹⁵ suggested different strategies to overcome this problem such as integrated both vertical and horizontal teaching learning approach. In Bangladesh, the demarcation between basic and clinical sciences is very clear with very little integration. Integrated teaching in different subjects on a particular organ or system by teachers from various disciplines is very much advocated in the present curriculum, but in the most of the subjects, its approaches were not well defined. In some subjects, like anatomy arrangement of a seminar is advised after completion of each card where teachers from various disciplines can address

organs or organ systems from different functional and clinical angles. But it goes against the issue of overloading, because this type of seminars don't minimize but maximize the duplications of teaching. This approach is not also realistic. Organ / system based integrated learning program is feasible within a conventional medical curriculum. In India some medical colleges following traditional curriculum have successfully introduced integrated organ / system based learning modules in the first year and also in clinical clerkship. Teaching throughout the medical course should be directed and coordinated at Faculty level rather than at departmental level, hence lessening the tendency of rapid accumulation of factual content and duplication of teaching. In Bangladesh, there is an individual Phase Committee for each phase consisting the subject specialists of the subjects remained under its jurisdiction, not from the subjects of other phases. So, horizontal duplication of the subject matters may be prevented by the each phase committee but vertical duplications can't be. Practically, the phase committees coordinate only the assessments and time space of the different subjects, nothing about the subject contents. The course contents should be given much more emphasis on applied aspects so that students can apply this knowledge in clinical medicine in third year. Additionally organization of courses / subjects is mainly departmental based. Educational objectives and core curricula are being defined for individual subjects and modules throughout the course. During the development of the curriculum 2002, a special study guide book was also developed and introduced containing core curriculum as guide for the students and teachers. But how far it is followed is questionable. To overcome this problem, teachers should also be aware about the strategy of "need to know" to identify the subject materials.

Majority of the students and teachers suggested the provision of professional examination at 3 months interval instead of 6 months. They probably thought that those who need to appear supplementary examination majority of them will be able to prepare themselves for examination within 3 months and as well as it will be easy to catch up the subjects that are taught during the last 3 months. In 6 months option students have only two opportunities to join their main stream, after failure of 2nd time in supplementary examination, they bound to join the next year students. This may be another possible reason for rejection of the existing 6 monthly examination option. This students and teachers

expectation was remained unmet in recent introduced curriculum.

The results of this study have certain implication in future curriculum review and further research. The study findings suggest further researches to explore the motives of negative attitudes of the students and teachers towards teaching of community medicine in phase I and formulate the effective strategies to accumulate the community medicine teaching in this phase. To add about phase I the unmet issues of recent updated undergraduate curriculum, like subject distribution in Phase II and Phase III, content overload and provision of professional examination at the 3 months interval should be consider during the future curriculum review.

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