

IMPROVEMENT OF MEDICAL EDUCATION IN DEVELOPING COUNTRIES THROUGH BEST PRACTICES

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Abstract

Background: Improvement of quantitative and qualitative dimensions of medical education is essential to provide quality health care. Research showed that medical students are facing challenges and barriers in building capacity in patient-centered health care. The study was conducted to assess opinion on factors influencing the optimum performance of medical students and collect their opinion on challenges and suggestions to overcome barriers of their learning. **Materials and methods:** This study was conducted at the Faculty of Medicine, University of Science & Technology Chittagong Bangladesh, in February 2014. Purposive sampling was done. Open ended questionnaire developed through modified Delphi technique was used to collect their responses. Students' satisfaction status on quality of education and related factors was assessed and graded using Likert scale. Data analysis was conducted by excel. **Results:** Response rate was 87.71 % and gender difference was observed (M: F Ratio 1:2). Most of the students (39 out of 50) showed concern for further intervention to improve the existing learning environment in medical colleges. Sixty percent (60%) of respondents

expressed their interest to join in any initiatives for capacity building. **Conclusion:** The findings of this study can be used to design cost effective strategies involving students to prepare rationally for a career in a field as challenging as medicine.

Key words

Medical education; Motivation; Learning environment; Challenges of education.

Introduction

Bangladesh has improved the health care system and achieved success in many areas of medical education over last two decades¹. Improvements of quantitative and qualitative dimensions of medical education are essential to provide quality health care. Further improvement is necessary to achieve the standard of the Global Health Observatory (GHO)². In the light of population-health work force ratio annual number of enrolment in graduate (MBBS) program to produce physicians per 100,000 populations is 6.21, population per registered physician is 2,039 and no. of registered physicians per 10,000 populations is 4.90 in Bangladesh. In graduate level the available seats for students are total 9,957, government 3,812, private 6,145 at MBBS level and total 1,917, government 532, private 1,385 at BDS level¹.

Preparing an effective and efficient workforce for the challenges of healthcare sector in pursuit to maintain Millennium Development Goals (MDGs) and attainment of Sustainable Development Goals (SDGs) requires a higher standard of learning and motivation at under graduate level. Failure in achieving expected professional efficiency and pro-people mind set among medical graduates can be an unfortunate and exhausting wastage of national and public resources in the long run. So, evaluating and overcoming the barriers in medical education is a timely and important task. Research showed that

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medical students are facing challenges and barriers in building capacity in patient-centered health care³. Literature review showed that these factors are often under-reported or unnoticed due to lack of rigorous research in these areas⁴. The roots of these challenges are deep seated in the academic and personal history of the students getting admitted into medical colleges.

The medical profession is considered to be both satisfying and lucrative, drawing the best students to its ranks every year^{5,6}. However, several studies have indicated occupational burnout as a substantial and growing problem among current medical practitioners suggesting that enthusiasm is replaced, somewhere along the way, by pessimism and cynicism^{7,8}. It has also been observed that many students in India prefer a career in medicine because of parental pressure and therefore lack motivation of their own nor do they display any professionalism⁹. It is to be remembered that in countries, i.e. India the majority of children taking this decision are very young and have lead a very protected life with plenty of parental guidance but with not much career counseling. Little has been done to examine whether they understand the demands and rigors of a career in medicine once they decide to choose it¹⁰. The scenario related to undergraduate medical education is nothing different in Bangladesh.

In this regard, students' academic failure in medical school not only leads to the waste of expenditure, efforts and time but also generates psychological, social and family problems for them¹¹. According to studies, this problem is increasing every year so that many students cannot handle the curriculum (Academic courses) or complete it in due time¹². According to the general education literature, motivation influences learning and outcomes of learning, for example performance. Motivation therefore is an independent variable influencing variables like learning, academic success etc¹³. Motivation for medical study may be influenced by a variety of factors in the individual student and the learning environment and curriculum¹⁴. Eventually, overall satisfaction and motivation level of the under graduates play a key role in success of the medical education system. We gave our efforts to sort out the factors affecting the satisfaction and motivation of the under grades along with potential means to enhance their learning based performance.

Academic failure includes various aspects of educational failure such as frequent absence from classes, dropping out, repeating the grade or low quality of education¹⁵. Investigating the learning experiences of students who experience academic difficulty and promoting academic advising as an intervention is a complex process given the wide range of interweaving variables. Exploring the satisfaction levels on learning experiences of students is a rigorous process given the wide range of interweaving variables¹⁶. Our study attempted to evaluate the factors related to learning environment of medical colleges, in particular the medical college under our study.

Materials and methods

The study was designed as an observational study to evaluate different challenging factors and means to overcome challenges existing in undergraduate medical institutions. The study was conducted in Faculty of Medicine, University of Science and Technology Chittagong (USTC) Chittagong from January 2014 to March 2014. Students of 1st year and 2nd year MBBS were invited to participate in the study through classroom campaign. 57 students found interested to participate in the study.

The first 10 students who consent for participating in the study and expressed their interest to be part of the contributory panel for questionnaire development of the study were recruited as volunteers to participate in series of discussions to generate study questionnaire. The rest were included as the respondents for the study. The questionnaire development was conducted following modified Delphi technique that is at the first session of the series the student volunteers and authors seat together to develop specific questions related to the study topics and options for each of the question. In a follow up discussion session the participants of the contributory pannel provide their opinions for including or excluding a question and their probable answers. The questionnaire was finalized through further two meetings.

Level of satisfaction of medical students about current learning environment and level of challenges faced by them was collected based on Likert-type scale. Other responses were obtained by a mixed questionnaire based on modified

Delphi technique. Informed written consent was taken prior to interview each respondent and anonymity and confidentiality of information was assured. The data were checked, verified and entered into a Microsoft Excel Spreadsheet for analysis.

Inclusion criteria:

- i) Undergraduate medical students (1st and 2nd year).
- ii) Students giving written informed consent for participation.

Exclusion criteria:

- i) Senior undergraduate students in 3rd, 4th and 5th year MBBS.
- ii) Students not willing to or giving written informed consent for participation.

Results

Table I : Satisfaction level of students on factors associated with motivation and learning environment

Associated factors	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
Level of self motivation	10	15	15	3	7
Family support	21	22	7	0	0
Support for career planning	10	32	5	3	0
Extracurricular activities	1	7	3	16	23
Learning sessions	15	18	4	13	0
Teaching standard	16	20	2	12	0
learning facilities	10	8	6	19	7
learning materials	8	21	6	10	5
Community services	9	12	2	15	12
Medical/ learning projects	0	9	3	24	14

Table II : Level of challenges faced by students related to different factors for learning

Factors for learning	Extremely challenging	Moderately challenging	Mildly challenging	Occasionally challenging	Not challenging
Personal factors	7	15	12	7	9
Social factors	3	12	14	5	16
Learning factors	7	16	11	8	8
Institutional factors	10	15	15	4	6
Other factors	9	17	11	5	8

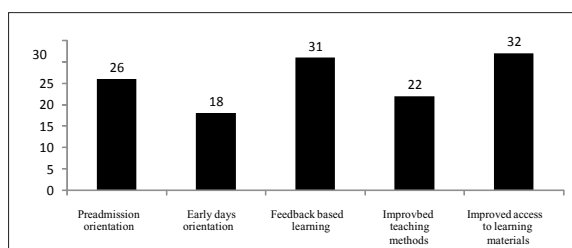


Fig 1: Means to overcome learning challenges

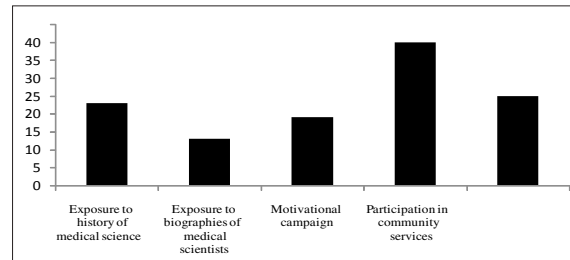


Fig 2 : Means to enhance motivation

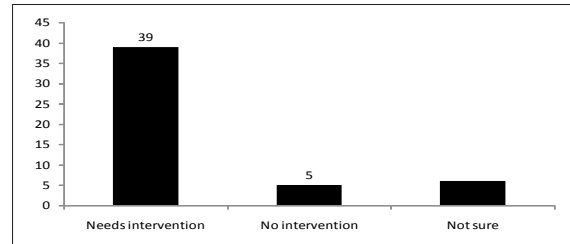


Fig 3 : Opinion for further improvement motivation

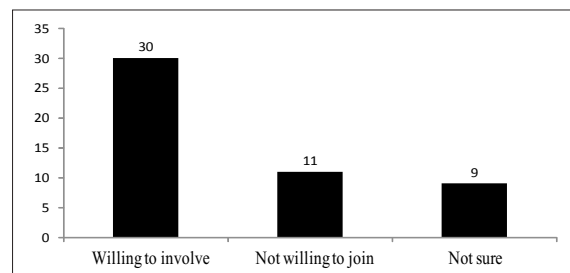


Fig 4 : Interest for involving in improvement activities

Total 57 students participated in the study. But 07 students withdrew their participation after completing response, which made 87.72 % responses to be included for analysis. The gender distribution among the respondents was almost the same as compared to medical student population in those batches of the medical college (M: F Ratio 1:2).

All the responses were subjective in nature that is the students shared their thoughts based on their subjective understanding of the questioned matters. In regard of the responses provided by the students, opinions on ways to enhance their motivation for improved learning were: sharing information on the history of medical science- 23, knowing biographies of medical scientists 14, organizing information sharing sessions similar to the clinical sessions-19, participating in community health services- 40, involving in different medical projects-25.

Participants also came up with means to overcome their learning challenges like preadmission orientation on medical education and profession- 26, early day's orientation on senior years of medical college and medical profession- 18, feedback based learning sessions- 31, integrating modern teaching methods- 22, and appropriate access to learning materials- 32.

Students faced a noticeable level of challenges in dealing with different factors like personal, familial, social, institutional etc in relation to their learning. Only 18.8% of them considered those factors not challenging while 81.2% found it challenging up to some extent. 36.6% students were dissatisfied with different factors connected to their motivation and learning environment and 52.8% were satisfied, the rest of the students were neutral in their responses. The percentage for challenges and satisfaction was calculated cumulatively.

Most of the students (39 out of 50) showed concern for further intervention to improve the existing learning environment in medical colleges. Sixty percent (60%) of respondents expressed their interest to join in initiatives taken for improvement of medical education.

Discussion

In a study based on subjective input there were always some information beyond the questionnaire. The first noticeable finding in this study was observing the students withdrawing their participation (07 out of 57) in the study within few days (02 to 05 days) after completion of the questionnaire. Discontinuation of the participation in the study might be due to the inconvenience or discomfort of commenting on their family or institutional factors contributing to their learning process. There could also be fear that their participation might influence their evaluation in future by the institution or examiners. Though they were assured of confidentiality and anonymity of the information repeatedly, they were not agreed to continue. This gave a hint of compromised self esteem among the students in evaluating their institution or personal and family factors contributing their learning. Interestingly, all the withdrawn students had a history of discussion about the study and

their responses with one or more teachers though they refused any relation of those discussions with their decision of withdrawal. The similar findings were observed in a study conducted in a medical school of Canada which identified the major challenge of reporting lapses and remediation. Those interviewed in a survey on socialization in medical school spoke to the difficult task of reporting, with fear of reprisal, both on the part of trainees and faculty¹⁷.

The level of satisfaction was obtained using the spectrum from very satisfied to very dissatisfied including satisfied, neutral and dissatisfied. Participants put their comments on different learning associated factors like level of self motivation, family support, support for career planning, scope of extracurricular activities, learning sessions, teaching standard, learning facilities, provision and access to learning materials and involvement in community services and medical/ learning projects. These associated factors were provided in the questionnaire based on prior discussions conducted with the volunteering group of students.

In this regard, responses of the students were analyzed cumulatively to state each of the satisfaction spectrums as provided in Table-I. 52.8% students were very satisfied or satisfied with the associated factors for learning while a noticeable part of them- 36.6% were either dissatisfied or very dissatisfied. Considering this overall percentage of satisfaction level- 52.8% as a cut off value we observed higher satisfaction level for factors like family support, support for career planning, learning sessions, teaching standard and learning materials and lower level of satisfaction for scope of extracurricular activities, learning facilities and involvement in community services and medical/ learning projects. However, 15 students remained neutral in their comments about their level of self motivation which is the highest for neutral grade.

Based on the level of challenges endured it was evident that the students were encountered with challenges ranging from extremely challenging to occasionally challenging in case of all factors, i.e. Personal, learning, institutional influencing their learning (41 to 44) except social factors- 16. This might be due to the greater acceptability and respect for the medical profession in general. Curiously, most of the students- 41 were facing challenges dealing with personal factors along with other influencing factors.

Exploring medical students' quality of life became increasingly important as they encounter a variety of stressors in the college including heavy study loads and stressful exams. As medical students face these impediments throughout their study in the college mainly during the preclinical years, acquiring higher academic and personal achievements becomes more challenging^{18,19}. Therefore, it would be of interest to contemplate preclinical students' quality of life and investigate various factors that can influence it²⁰.

It is commonly perceived that use of technology in teaching is a critical component for improving the quality of training as it helps ease the teaching burden that accompanies rapid scale up of student intake²¹. In an attempt to collect thoughts of the students on other potential means we allowed them to provide more than one input if they liked to. To overcome learning challenges, prescribed options include preadmission orientation on medical education and profession-26, early day's orientation on senior years of education and profession-18, feedback based learning-31, improved teaching methods-22 and improved access to learning materials-32.

Gist of these thoughts might provide a base for concerns on well organised and appropriately timed orientation programs in early days of medical college and integration of modern methods and techniques in teaching, classroom arrangement and sharing learning materials among the peers. Largest segment of the students-40 considered attachment in community health services as a mean of enhancing motivation for learning. They also thought of participating in diverse medical projects - 25 as a booster of motivation. Creatively, other ways of improvised motivation were surfaced i.e. exposure to history of medical science, exposure to biographies of medical scientists and motivational campaign. A wide range of studies have ascertained the effect of scholastic performance on various components of psychological health including emotional intelligence, anxiety and depression^{22,23}. Thus, motivation programs to enhance the psychological health would be crucial for the students' performance. This is also indicated in several studies conducted in the field of medical education that an inflation of GPA was attributed to an incline in the level of spirituality, intelligence, motivation and self-esteem, and a decline in depression^{24,25}.

Closed or single response was sought on necessity of further interventions for the improvement of medical education and willingness of medical undergraduates to involve in such initiatives. Since the students are the consumers or clients of the medical education system they are in a rightful position to comment on the enhancement of the standard of the services provided by the medical institutions. However, 39 students- 78% felt the requirement for intervening current medical education system while 05 students- 10% considered any change is not required. 06 students - 12% were not sure of any change might be due to the reason that they were skeptic or agnostic about the outcome of changes initiated in medical education based on their experiences. As a realm of hope it is found that 30 out of 50 students were willing to involve in improvement initiatives voluntarily while 11 were not willing and 09 students were not sure of their involvement. These findings may be helpful in formulating intervention strategies in a cost effective manner. Because involving the students in intervention activities may reduce the cost and ensure the success of activity packages effectively.

As medical colleges strive to provide the optimal learning environment to students, more attention needs to be directed towards consistent measurement of students' quality of life. Medical schools should build reforms in medical education and provide recreation centers in order to minimize the stress and burnout of students. It should also provide a positive environment and greater support for preclinical students who are poor in their academic performance. Furthermore, preclinical students who encounter difficulties in progressing in their academia should also ask for help and appeal for a positive change²⁰.

Limitations

Due to lack of funding and time constraint the authors could not include large number of participants and participation from different medical colleges of the country could not be attempted. Senior medical students would provide complementary inputs if they were included in the study. So, further study of same kind is necessary involving senior medical students and different medical colleges over the country.

Conclusion

This study, a subjective evaluation explored that students who will join the medical profession a majority do not avail appropriate orientation on medical profession and not convenient with the current learning environment which can lead to subsequent inefficiency and discomfort. Activities like exposure to real life situations in healthcare set ups and history of medical science and working as volunteers in health care initiatives can be feasible and effective approaches to prepare them for their successful pursuit of the profession. Considering the responses obtained from the students, we feel that family being a strong motivating factor and it should keep on encouraging and supporting students all through their pre career life, while the academic institutions may formulate activities to reduce subsequent occupational embarrassment. The findings of this study could also be used to design cost effective strategies involving students to prepare rationally for a career in a field as challenging as medicine. However, further studies involving students from other parts of the country or developing countries may help to find suitable directives to medical educators and policy makers.

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Disclosure

All authors declare no competing interest.

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