Perception of medical students on the impact of preparatory year on the study of medicine — an integrated medical curriculum experience

Abdullah Mohammad AL-Shahrani

Abstract

Objective: To assess medical students' perception about their satisfaction regarding the preparatory year.

Methods: The cross-sectional study was conducted at the University of Bisha College of Medicine, Saudi Arabia, from October 2017 to April 2018, and comprised medical students. A12-item validated questionnaire related to teaching, assessment and mentoring was used for data collection. Data was analysed using SPSS 20.

Results: Of the 83 students, 40(48.2%) were from year 3 and 43(51.8%) were from year 2.Overall mean score of year 2 students was 20.79 ± 5.9and for year 3 students it was 23.18 ± 6.8 ($p>0.05$).

Conclusion: The quality of the preparatory year activities could be improved through review of the existing courses and introduction of more relevant ones.

Keywords: Perception, Medical students, Preparatory year, Saudi Arabia.

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Introduction

Learning has been found to be constructive, cumulative and goal-oriented. It helps in giving training of skills and various topics to students. Through this, the teacher becomes more productive and efficient in handling activities of the various learning situations.[1] The learner appreciates and integrates new information to form meaningful ideas with her/his prior knowledge and former experiences.[2] This belief in the active role of the learner, that it is the student's perceptions of the learning environment which influences how a student learns, is a very important issue in the learning process.[3] Medical education as part of learning is a process of which feedback from students is an integral part.[4] Providing feedback by the students has been shown to be associated with better learning and progress on the part of the students in terms of skills and performance and helps in reinserting into the system the results of its performance.[5] Feedback is an important part of medical education and is necessary for students to improve as learners and practitioners.[6] Feedback provided by the students is valuable and is a representation of their perception and can thereby help in the advancement and improvement of the testing process.[7] Orientation and foundation programme for the MBBS students at the entry level helps to reduce students' anxiety and increase their confidence and facilitates their transition from high school to an undergraduate medical course.[8] It was therefore, concluded that the preparatory year (PY) makes impact on the training of students during the subsequent years of the study.[9]

The PY at the University of Bishain Saudi Arabia is a compulsory one-year programme for students who enrol to study medicine and other healthcare profession programmes. The main PY goal at the University of Bisha College of Medicine is to prepare students for the MBBS programme. Subjects taught during PY include English, Biology, Physics, Chemistry, Statistics, Computer Science and Ethics. The ultimate goal of teaching these subjects is to reinforce concepts in the above subjects and fill-in the gaps of knowledge which could be evident at the level of the professional degree programme. Other aspects include how concepts are taught, learned and evaluated. Areas of major concern are the innovative teaching and learning tools like problem-based learning (PBL), team-based learning (TBL), self-directed learning (SDL), lectures, and major assessment tools like multiple choice questions (MCQs), short answer questions (SAQs), among others. The PY curriculum, therefore, has been designed to prepare students for their ultimate studies of the MBBS programme.

English language being the medium of instruction at the College and one of the main PY subjects has been one of the focal points. In line with modern trend to provide high standard of education, PY has been given a lot of emphasis in nearly all public universities in Saudi Arabia.[10,11] All medical schools in Saudi Arabia have English as the official medium of instruction and the

College of Medicine, University of Bisha, Saudi Arabia.
Correspondence: Email: ab_alshahrani@ub.edu.sa

English course covers all aspects of medical jargon in English.[12] It was reported that English has been identified as necessary for academic success in many medical schools.[13] Mentoring is a dynamic reciprocal relationship in a work environment between two individuals where one is an advanced career incumbent and the other is a less experienced person, and the relationship is aimed at fostering the development of the less experienced person.[14,15]

The current study was planned to know from students' perspectives if PY teaching and assessments at our institution were adequate enough to prepare students for the study of the MBBS programme.

Subjects and Methods

The cross-sectional study was conducted the University of Bisha College of Medicine, Saudi Arabia, from October 2017 to April 2018, and comprised medical students of second and third years who had passed the PY courses.

After ethical approval was obtained from institutional research committee, a questionnaire was developed and tested for both validity and reliability. Each item of the questionnaire was revised and scored by a panel of content experts. The overall individual items content validity index (I-CVI) of the questionnaire was calculated as 0.87. The internal consistency reliability of the questionnaire was measured through Cronbach alpha which was 0.85. A pilot study of the questionnaire was conducted on a cohort of students before the actual study.

The idea behind selecting second and third year students was that they had successfully passed through PY and were in a good position to reflect on their experiences. Informed consent was obtained from all the subjects and they filled up the questionnaire voluntarily.

The questionnaire had a total of 12 items, with items 1 and 2 indicating the year of study and cumulative grade point average (CGPA) at the PY stage. The remaining 10 items were related to the teaching and assessment tools. A 4-point Likert scale was used to get the responses of the students. The items on the questionnaire were categorised into teaching, assessment and mentoring domains. At the institution, mentoring is conducted on a weekly basis. The mentoring process starts at the second year. Based on this, perception of students about mentoring starting at the PY level for the MBBS programme was included in the questionnaire. The score of each statement on the questionnaire ranged from 1 to 4; 1 = strongly disagree, 2 = disagree, 3 = agree and 4 = strongly agree. No response was given a zero point. The teaching domain had 7 items with a maximum score of 28, assessment domain had 2 items with a maximum score of 8, and mentoring had one item with a maximum score of 4 (Table-1). Data was analysed using SPSS 20. Independent sample t test was used to calculate mean and standard deviation (SD). Level of significance was set at $p \leq 0.05$

Results

Of the 83 students, 40(48.2%) were from year 3 and 43(51.8%) were from year 2.Regarding PY satisfaction, mean score of year 2 students was 1.58 1.2, and for year 3 students it was 2.53 1.2(p=0.001). The overall scores of the teaching domain were 14.0 4.6for year 2 students and 16.75 4.9 for year 3 students (p=0.012).

In the assessment domain, year 2 students had a score of 1.74 1.0in terms of higher order thinking, while year 3 students scored 2.20 1.3. The overall score of assessments domain was 3.79 1.5for year 2 students and 4.23 2.1 for year 3 students (p=0.132).

Table-1: Students' perceptions according to teaching, assessment and mentoring.

Domains	Items*	MDS
Teaching	1. Activities of the Preparatory Year give me satisfaction as pre-requisites for the following years of the MBBS programme	28
	2. Tutors are well prepared for their activities	
	3. Subjects taught at the PY are relevant to the study of Medicine	
	4. Teaching experience of the PY prepares me well for the MBBS programme	
	5. Teaching of English language at the PY is relevant for the programme	
	6. Teaching done according to the learning outcomes	
	7. Teaching of professionalism and behaviours should start at the PY	
Assessment	1. Assessment methods in the PY focus on higher order thinking (analysis and synthesis)	8
	2. Assessment of courses reflects learning outcomes	
Mentoring	1. Mentoring should start at the PY	4

* Each item has maximum score of 4, MDS; maximum domain scores which is equal to No. of items × its maximum score.

Table-2: Result of perception of students of College of Medicine University of Bisha on the impact of preparatory year on the study of MBBS programme.

Items & Domains	Year two Mean ± SD	Year three Mean ± SD	P- Value
Items of Teaching			
1. Activities of the PY give me satisfaction as pre-requisites for the following years of the MBBS	1.58 ± 1.24	2.53 ± 1.22	0.001
2. Tutors are well prepared for their activities	2.07 ± 1.22	2.35 ± 1.17	0.282
3. Subjects taught at the PY are relevant to the study of Medicine	1.83 ± 1.01	2.23 ± 1.12	0.044
4. Teaching experience of the PY prepares me well for the MBBS	1.56 ± 1.35	2.35 ± 1.25	0.010
5. Teaching of English language at the PY is relevant for the MBBS	2.21 ± 1.37	2.35 ± 1.58	0.556
6. Teaching done according to the learning outcomes	1.91 ± 0.95	2.30 ± 1.26	0.098
7. Teaching of professionalism and behaviours should start at the PY	2.95 ± 1.09	2.65 ± 1.42	0.441
Teaching Domain# (Max scores = 28)	14.07 ± 4.6	16.7 ± 4.91	0.012
Items of Assessment			
1. Assessment methods in the PY focus on higher order thinking (analysis and synthesis)	1.74 ± 1.09	2.20 ± 1.32	0.061
2. Assessment of courses reflects learning outcomes	2.05 ± 1.00	2.03 ±1.14	0.973
Assessment domain# (Max. scores = 8)	3.79 ±1.58	4.23 ± 2.15	0.132
Item of Mentoring			
1. Mentoring should start at the PY	2.93 ± 1.40	2.20 ± 1.62	0.028
Overall Scores of the Items# (Maximum Scores = 40)	20.79 ± 5.9	23.18 ± 6.86	0.093

The variables were analyzed using independent sample t -test
PY: Preparatory Year.

The mean score of year 2 students on mentoring was 2.93 1.4, while year 3 students scored 2.2 1.6(p=0.028) (Table 2). Overall scores of the 10 items studied showed that year 2 students had a mean score of 20.79 5.9 and year 3 students 23.18 6.8(p=0.093).

Discussion

PY is mandatory in most medical colleges across many Gulf and Asian countries, which is considered as the pre-medicine year of the MBBS programme. In many countries, there are different interventions to strengthen the standards of higher education which include active implementation of the PY programme in different colleges. PY still remains a matter of debate among researchers despite maturation of the experiment internationally.[14-16]

There were interesting findings from the current study, for instance, regarding the PY satisfaction of the students, with year 3 students scoring higher than year 2 students. Although both the groups had successfully passed through PY, the higher positive responses from third year students could be due to the fact that they had more years of experience in the MBBS programme than the second year students. The same trend was observed with respect to the relevance of the subjects/courses taught during PY. It was also maintained across the teaching domain; the only exception was on the teaching of professionalism and behaviour where the mean score of year 2 students was slightly higher. However, the overall mean score of all the items on the teaching domain was significantly higher for year 3 students. This agrees with findings of a study which showed the importance of analysis of various approaches to identification of the potential to improve approach to education.[17] The finding of this study can also be compared with a related study regarding students' perception of the educational environment in regular and bridging nursing programme. The result showed that 67% of the students rated the programme as excellent or positive with higher responses coming from regular nursing programme students.[18]

The responses of the two groups on the relevance of teaching English were positive. This is in agreement with a study which showed a positive correlation between the score of English language assessment and final summative part of the medical content assessment.[14] With respect to the learning outcomes, students' perception on whether PY activities are being conducted according to the learning outcomes was incorporated in the current study. The result of this aspect maintained the same trend, with higher scores coming from year 3 students. An earlier studies compared the preference of students between PBL and traditional lectures regarding learning outcomes and integration between Basic and Clinical Sciences. The students gave a higher preference for PBL because it gives a better linkage between Basic and Clinical Sciences.[19,20] A study proved that students following PBL curriculum had more positive perceptions on

teaching and learning, knowledge and skills, outcomes of their course materials and satisfaction compared to the students belonging to the traditional style of medical schooling.[21]

At our institution, teaching of professionalism starts in the second year. Overwhelmingly, year 2 students had a higher score on this aspect compared to year 3 students.

In the assessment domain, higher positive responses came from year 3 students with regards to higher order thinking. There was no significant difference between the mean score of the two groups of students on assessment based on learning outcomes (p=0.973).

As for mentoring, year 2 students obtained significantly higher scores compared to year 3 students. From the result of perception on mentoring, it is clear that majority of the students had found mentoring to be an important aspect of their career development. This is in agreement with the findings of a study that acknowledged that mentoring is a key to successful and satisfying career and is an important career advancement tool.[16]

From the findings of the current study, it is important for the stakeholders in higher education to understand that PY should incorporate the best teaching and assessment strategies so as to bridge the gap between higher school studies and the medical programme. There are numerous challenges which students face as a result of transition from higher school to the more open, free and self-reliant university environment. Educational institutions need to clearly define the values and strategic plans to identify their capacities, policy and quality objectives for educational programmes. Measuring students' satisfaction with their experience in higher education is now commonplace.[17,22] This in turn requires universities to care more about the quality of academic life in the PY and beyond.

The current study was carried out with a relatively small sample size because the study site is new, and a large number of students are not admitted in order to maintain high quality and standards.

Despite the limitation, the importance of this study is that it incorporates the concepts of modern educational theories that focus on the learner participation in teaching and evaluations that they undergo during PY and the main degree programme. The study has provided valuable information about the PY program with strengths and deficiencies that could be used to achieve the objectives of this programme. Courses like communication skills and other activities like mentoring should be incorporated in PY. Other universities can look at the benefit of such courses with a view to introducing the same in PY.

Conclusion

PY provides students with knowledge which prepares them for the study of medicine and it can be improved through periodic review of the curriculum. An innovative curriculum could be expected in the form of structured study guides. It is expected that these measures will further improve the quality of PY teaching and assessments, integrating it closely with the MBBS programme.

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