

Design and implement elective module on yoga and yoga-based research in physiology



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ABSTRACT

Background: Elective allows students to think of a career beyond examinations and gives them an impetus to think laterally besides laying down the foundation for future professional pathways. Hence, understanding the importance of electives among medical undergraduates in their academic life is important and electives is not being offered by medical students in India till now. **Aims and Objectives:** The objectives of this study were as follows: (1) To design elective module on yoga and implement (pilot test) the elective module in 1st MBBS students and (2) to analyze the perception of students and the faculties for the module. **Materials and Methods:** The study was conducted in the department of physiology among 106 subjects including 1st-year MBBS students and faculty. Faculty sensitization program on the development of the elective module. The evaluation was done by a pre-post standardized validated questionnaire. Perception of faculty (n=05) and students (n=100) taken on Likert's scale questionnaire by Google form. **Results:** Results of pre-test and post-test of student's assessment were compared by paired t-test suggested that outcome is statistically significant with $P < 0.05$ in post-test. Eighty percent of students and 80% of faculties found that the elective module is excellent. **Conclusion:** The result of the study suggests that the elective module of yoga was well perceived by students and faculty. Electives are learning experiences that will provide the learner with an opportunity to gain an immersive experience of carrier stream, discipline, or research project.

Key words: Elective; Sensitization; Yoga

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INTRODUCTION

The MBBS program is geared to create a primary care provider of first contact. It also visualizes the student as a future scholar, specialist, researcher, and scientist.¹ Provision of avenues in the competency-based undergraduate MBBS program for the student to explore and experience various streams of the profession is important. The opportunity to "work" in a clinical, laboratory, research, and community set up or in a team-based setting at an early stage in the profession is an invaluable experience for learners as this will have lasting impact on their professional life. An elective allows students to think of a career beyond examinations and gives them an impetus to think laterally besides laying down the foundation for future professional pathways. Electives are useful in developing personal and

professional growth among students. Hence, understanding the importance of electives among medical undergraduates on their academic life is important. Regulatory body for medical colleges across India, now National Medical Commission introduced Competency-Based Medical Education curriculum for undergraduate medical training in the year 2019. Under these regulations, electives have been introduced for the 1st time in medical undergraduate training in India. Flexner published Report in 1910, that medical teaching and curriculum progressed toward standardisation.² Since then, a change in the paradigm led to the implementation of alternative curricula pathways in addition to the core curriculum, including shortened preclinical curricula, dedicated research time, and early clinical experiences.³ These alternative curricular pathways are designated as "electives" and, although there is no

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standard definition, the term infers to “a period of time during undergraduate within, in which there is a significant element of student choice.”⁴ Elective providing a better learning and academic success, delivered by the possibility of personalizing medical curricula, and stimulating students’ self-motivation.⁵ Electives emerge as a complement to this core curriculum as they provide students with the opportunity to customize their studies by selecting, directing, and organizing the curricula that best meets their individual needs and interests.⁶ Furthermore, electives may represent the recognition by medical schools of new emerging scientific areas, the accomplishment of the growing importance of the biomedical, statistical, social and epidemiologic sciences as well as information technologies, and the need for a novel strategy to cope with the constraints of an expanding body of knowledge while having a limited amount of educational time.³ International electives are commonly a part of the curricula of medical schools in developed countries. Basic science and clinical syllabus remain the strongest foundation of medical curricula and UK^{7,8} and in 16 of 17 schools in Canada.⁹ Nevertheless, electives emerge as a complement to this core curriculum as they provide students with the opportunity to customize their studies by selecting, directing, and organizing the curricula that best meet their individual needs and interests.^{3,6} Furthermore, electives may represent the recognition by medical schools of new emerging scientific areas, the accomplishment of the growing importance of the biomedical, statistical, social and epidemiologic sciences as well as information technologies, and the need for a novel strategy to cope with the constraints of an expanding body of knowledge while having a limited amount of educational time.³ Electives have tended to remain comparatively less well monitored, regulated, and thus potentially of variable educational benefit. In many medical schools, remain largely untouched by significant educational innovations and practice seen in the approach to other curricular elements over the past two decades and their potential contribution to learning, not only within global health, thus underutilised.¹⁰ The elective may be the least-researched component of a medical course,¹¹ despite an acceptance that it is also the component over which a medical school has the least control, and that potentially exposes students to both the greatest risk and simultaneously the greatest opportunity for significant “transformative” learning. Thus, the first goal of this work is to assess students’ perceptions of the opportunities that electives create in the medical curriculum. The second goal is to provide insights about the best approach to implement electives in medical curricula regarding its organization, methodologies of assessment, and classes typology to meet students’ satisfaction. Finally, we aim to assess predictor factors derived from students’ satisfaction with electives that might influence their future professional life.

Aims and objectives

The aims of this study were as follows:

1. To design an elective module on yoga
2. To develop a faculty and student sensitization program on the development of elective module
3. To implement (pilot test) the elective module in 1st MBBS student
4. To analyze the perception of students and the faculties for the module.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Department of Physiology, Zydus Medical College and Hospital. It was educational interventional study. After obtaining ethical clearance from the Institutional Ethics Committee, the study was designed elective module on yoga and validated it by expert faculties. Total 100 1st year MBBS student was involved in the study. Duration of study was 6 months. Pre-validated structured questionnaire with 5 point Likert scale was used. Faculty sensitization program on development of elective module was conducted. Faculty perception was taken on Likert’s scale questionnaire by developing Google form. Elective module was implemented on students (n=6) as small research project for students. In 1st week, we taught students about yoga by certified yoga teacher. At the end of 1st week, formative assessment of students was taken by pre validated questionnaire (Pre-test MCQs by Google form). In the 2nd week, demonstration of yoga and then students performed under observation. Then, students performed independently on selected subjects. At the end of the 2nd week, the psychomotor domain was observed by direct observation, while the students performed checklist communication by Kalamazzo consensus. During 3rd week, students were taught how to collect data, documentation of data, and usage of statistical software. At the end of 3rd week, a formative assessment of students was done by the validated questioner, post-test MCQ was taken by Google form. In the 4th week, students were taught how to write an abstract. At the end of 4th week, student’s presented abstract to a group of peers and supervisors. The perception of students was taken on Likert’ scale questionnaire by Google form.

Data evaluation

Data were collected using a Microsoft excel sheet and analyzed with SPS software (24th version). Descriptive statistics were applied analysis of data. Data from the pre-test and post-test questionnaires of students were analyzed by paired t-test. Statistical significance P-value (P<0.001) was considered significant. The responded close end answers on Likert’s scale will be expressed as a percentage.

RESULTS

Results were presented in table format expressing in mean and standard deviation.

DISCUSSION

Table 1 shows pre-test and post-test assessment of students. The difference between pre-test and post-test is statically significant ($P < 0.05$). Table 2 shows the perception of faculty on the yoga elective module. The elective module on yoga was well perceived by faculty and 80% of faculty strongly agree that the elective module helps the student to do research in the medical field. Table 3 shows the perception of students on the yoga elective module. The elective module was well perceived by students also. Ninety per cent of students agree that elective modules motivate them to do research in the medical field.

When it comes to teaching-learning effectiveness, there is no single approach that best fits all students. Thus, there is a pressing need to adjust the teaching/learning experience for each student,¹² which justifies the existence of electives in pre-graduated curricula. Electives are said to help undergraduates become familiar with changes and deal with new and uncertain situations. Electives can contribute to both the professional and personal development of medical students in specific areas of interest outside of the standard curriculum.¹³⁻¹⁵ The objectives of undergraduate medical education are not only to deliver knowledge and skill but also to acquire ethics and attitude toward medicine field.¹⁶ Hence, Elective courses have been labeled as a basis for transferable skills.¹⁷

According to our analyzed results, undergraduate students perceived elective module on yoga as an advantage for themselves. In our study, the majority of the undergraduate students (90%) said that the elective module on yoga is useful. This shows that electives, regardless of their type, are important for a medical student's academic career and play a key role in shaping and polishing their skill set that would make a drastic improvement in their work in their respective fields. Students perceive electives as a valuable, highly regarded experience,¹⁸ with benefits in providing better learning and academic success, delivered by the possibility of personalizing medical curricula and stimulating students' self-motivation.⁵ The yoga elective

demonstrated statistically significant increases in self-regulation and self-compassion, and suggestions of improvements in empathy and perceived stress, although those did not reach statistical significance.¹⁹

The elective may usefully be spent exploring a medical speciality the student may have already studied and expand this experience into a different context or even explore a speciality not covered in the core curriculum. Students may opt for a career choice elective simply because they are interested in a particular speciality, although it is also possible that their motivation includes a strategy to enhance their chances of obtaining a better post-graduate post in a competitive market.²⁰ Career choice electives in non-clinical areas have also been purposively developed to market other aspects of medical careers to students; an example being the value of "research electives" in increasing the number of students considering an academic pathway.²¹

Another important role electives can play in individual students' personal development is to support those who are academically struggling to undertake prescribed course components. Students can be directed to utilize elective time to gain further knowledge or clinical skills in identified areas of weakness. The electives increase medical student knowledge in areas outside of the traditional medical school curriculum, teach medical students useful skills, increase student wellness, and impact eventual career choices. Each elective that we reviewed employed the use of student data and other measurable outcome measures to inform readers and implement internal changes to the electives.³

There are a wide range of activities available to elective students, and for many, this provides a unique opportunity for a student to personally challenge themselves, often beyond the confines of their home medical school. Ensuring a student-centred approach to an elective requires medical schools to dedicate adequate resources to support not only the student's arrangements for a safe and educational elective but also important to ensure maximizing educational, personal, and professional development. An elective designed in this way not only helps the individual student but also raises their awareness of health issues in the medical profession and potential ways of managing personal and professional problems.^{22,23} Organization of electives in the medical curriculum should be done through a student-centred approach, to maximize educational, personal, and professional development.⁴ Thus, student feedback is crucial. Medical schools should have a role in facilitating elective choice for students, by encouraging them to be realistic about their aims, tailoring electives to students' expectations, and ensuring the optimization of high-quality elective placements.⁴ Electives allow for more in-depth development of the syllabus, contributing to the

Table 1: Pre-test and post-test assessment of students (n=100)

Paired sample	Mean	SD	P-value
Pre-test	5.34	1.53	<0.05
Post-test	7.06	1.61	

Table 2: Perception of faculty on yoga elective Module

S. No.	Questions (Observation, n=05)	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)
1	Objectives of elective module on yoga is clear	40	60		
2	Should I take yoga as elective module	20	60	20	
3	Assessment criteria on elective module on yoga is appropriate	20	80		
4	Elective module will motivate student to do research	20	80		
5	Proposed content in elective module on yoga is adequate.	60	40		

Table 3: Perception of student on yoga elective module

S. No.	Questions (Observation, n=5)	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)
1	Objectives of elective module on yoga is clear	42	49	6	2.
2	Assessment criteria on elective module on yoga is appropriate	38	48	9	4
3	Proposed content in Elective module on yoga is adequate	41	48	8	2
4	Would I like to take elective module on yoga	38	52	10	0
5	Would yoga module motivates me to do medical research	68	27	4	0

diversity of experiences and scientific knowledge, while simultaneously instilling the responsibility on the learner to build their own educational path. This has been supported by some students' statements describing electives as being innovative, interesting and offering relevant content, adding competencies to the core curricula and making students feel realized with their learning experience, which reinforces their relevance in the medical curriculum. According to our analyzed results, the undergraduate student's perceived yoga electives as an advantage themselves. This shows that opting for electives regardless of their type has proven to be fruitful for the undergraduates' personal growth and academic career, allowing more scope for understudies to practice and enhance their skills.²⁴

Limitations of the study

The study was conducted only in first-year MBBS students.

CONCLUSION

Electives play a significant role in the education of medical students by growing academic awareness in areas beyond the standard curriculum, introducing valuable skills to medical students, improving student well-being, and allowing ultimate career choices. We believe that electives have a quantifiable, beneficial effect on the comprehension of medical subjects among students, and can therefore be a valuable addition to the formal curriculum. This should also be a priority for national medical institutes to train their students in elective programs. Students perceive electives as a valuable, highly regarded experience, with benefits in providing better learning and academic success, delivered by the possibility of personalizing medical curricula and stimulating students' self-motivation. These electives play an important role in medical students' education by

increasing medical student knowledge in areas outside of the traditional curriculum, teaching medical students useful skills, increasing student wellness, and impacting eventual career choices. Electives provide unique opportunities for students to design and organize individualized educational experiences.

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