

RESEARCH ARTICLE

Do pharmacology faculties welcome the new competency-based undergraduate curriculum? A nationwide questionnaire-based study

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ABSTRACT


Background: In 2018, Medical Council of India (MCI) recommended competency-based medical education (CBME) for medical undergraduates. **Aim and objective:** A questionnaire-based study was conducted to assess the perceptions and preparedness of pharmacology faculties on CBME. **Materials and Methods:** The study was conducted among pharmacology faculties selected on basis of any one or more of the following criteria: (1) Faculties who attended the national faculty development program conducted by MCI and (2) Members of Indian Society for Rational Pharmacotherapeutics. The questionnaire was made available through Google doc online platform which was e-mailed/WhatsApp to selected participants. It included questions related to components of the curriculum, namely, objectives, teaching-learning methods, and integration of disciplines. The responses received were analyzed in Microsoft Excel sheet using descriptive statistics. **Results:** Questionnaire was sent to 1424 participants out of which 144 (10.1%) responded. Majority (27.8%) had 6–10 years of postgraduate teaching experience. A total of 130 (90.3%) respondents were aware of CBME; sensitization workshops, continuing medical education (CME), etc., (41.5%) being most frequent source of information. Half of respondents (49.2%) were prepared to implement the curriculum, while 26 (20.0%) were not. The lack of training about CBME was the most cited reason for non-preparedness. Majority (64.6%) of the respondents (84/130) considered horizontal and vertical integration to implement the new curriculum is feasible. However, most of them (70.8%) expressed reduction in teaching hours will be inadequate to complete pharmacology syllabus. On a scale of ten, the average rating of the respondents for new curriculum (6.83) did not show any statistical difference against old one (6.25). **Conclusion:** In our study, most of the participants welcome the new curriculum, although majority suggested need for training and guidance. To further understand the requirements, national organizations like MCI may conduct larger studies in the wide network of institutes.

KEY WORDS: Pharmacology; Faculty; Competence Based Undergraduate Curriculum

INTRODUCTION

Patient is the center of medical universe; this necessitates that the physician treating ailments of the patient must be competent

with regard to knowledge, attitude, communication, skill, and ethics ensuring delivery of excellent health care.^[1] Medical education, so far in India, delivered the defined curriculum through lectures, tutorials and practical sessions which were primarily teacher centric. Evaluation of the students was focused more on the assessing the knowledge than the skill which resulted in inadequate ability of medical graduates to comprehend the importance of communication, critical reasoning and analysis, and empathy in patient care.^[2] Perhaps over the time, ineffective execution of these key domains has resulted in steady decline of undergraduate medical competencies.^[3,4] In this backdrop, the Medical Council of

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India (MCI) has recommended competency-based medical education (CBME) curriculum to ensure that the graduates are prepared to cater the ever changing health-care needs of the patients.^[5]

Second professional MBBS subjects play a hinge role in translating knowledge of basic science into patient care. Moreover, in dynamically changing field of medicine, the subject of pharmacology takes the center stage of 2nd professional MBBS. The new curriculum proposes a decrease in pharmacology teaching hours to be covered in 12 months. In this perspective, the present questionnaire based study was conducted to assess the perceptions and preparedness of pharmacology faculties on competency-based undergraduate curriculum (CBUG) and implementation.

MATERIALS AND METHODS

Following the approval of the Institutional Ethics Committee, a questionnaire-based survey was conducted among the faculties having MD (Pharmacology) degree across the country. The participants were included on basis of any one or more of the following criteria:

- Faculties who had attended the national faculty development program conducted by MCI through its regional centers since July 2009. The list was obtained from the official site of MCI (<https://www.mciindia.org/CMS/information-desk/for-colleges/national-faculty-development-programme>)
- Members of Indian Society for Rational Pharmacotherapeutics (ISRPT), a national organization of medical pharmacologists of India.

The questionnaire was prepared based on the content of recent recommendations of MCI to implement competency-based curriculum for undergraduate MBBS students in Pharmacology. The questionnaire included questions related to components of the curriculum, namely, objectives, teaching–learning materials/methods, integration of disciplines, and assessment. The questionnaire was pilot tested involving 20 respondents. The survey form was sent to these respondents through local WhatsApp groups/emails. On the basis of analysis of their responses, two questions were modified.

The pre-tested questionnaire was made available through Google doc online platform. (<https://forms.gle/khpmc14QkhYvi8SV8>) The online link was e-mailed or sent through WhatsApp to the participants for their response. We changed the setting of online survey form to single response per user/participant. A time frame of 7 days was given to the participants to respond. If required a reminder message was sent to non-respondents. The responses received after 2 weeks of reminder message were excluded from the analysis. Anonymity of the participants' responses was strictly maintained. The responses received were recorded

and analyzed using Microsoft Excel sheet using descriptive statistics and to analyze the difference of mean scores between old and new curriculum, unpaired *t*-test was used.

RESULTS

The link of the survey form (<https://forms.gle/khpmc14QkhYvi8SV8>) was mailed to 1424 participants which included 840 from MCI source and 584 from the list of ISRPT life members. In the initial mail/message sent, a total of 93 (6.53%) faculties responded to the survey, whereas 51 (3.58%) faculties filled the survey after a reminder mail/message. Thus, a total of 144 (10.11%) participants responded to the study questionnaire-based survey.

Majority of the respondents had their affiliation to the teaching institution in Delhi (25.0%), followed by Gujarat (12.5%) and Maharashtra (11.1%) [Table 1]. Most of the participants (27.8%) had 6–10 years of postgraduate (PG) teaching experience in pharmacology. Our study revealed that 130 (90.3%) respondents were aware of CBUG. Sensitization workshops, CME, etc., (41.5%) were the most common source of first information about CBUG, followed by office order from their institutional authorities (30.8%).

A total of 90 (69.2%) respondents had attended conference/workshop/CME on the new curriculum envisaging CBUG. 88 participants (67.7%) knew the correct year of implementation of CBUG. Half (49.2%) of the respondents considered themselves prepared enough to implement the curriculum, while 26 (20.0%) were not prepared and rest declined to comment. The lack of training about CBUG was the most cited reason (69.2%) for the non-preparedness to implement. However, inadequate number of faculty (11.5%) available in their department, lack of clarity in defining competency (11.5%), and absence of teaching module (7.8%) were also the cited reasons.

A total of 102 (78.5%) respondents stated that they had previously conducted or participated in multidisciplinary integrated teaching–learning activity. Of this majority (90.2%) were of the opinion that it benefitted the students. The benefit of the students was evident by their positive feedback (76.1%), improved comprehension (50.0%) and examination scores (28.3%).

Majority (64.6%) of the respondents (84/130) considered that horizontal and vertical integration to implement the new curriculum is feasible in their institute, while 34 (26.2%) declined the feasibility. These respondents stated the reasons for their non-preparedness as inadequate faculty (35.3%), lack of interdepartmental coordination (17.7%), non-functional medical education unit (17.7%) and decreased enthusiasm of senior faculty (11.8%).

Almost two-third of the respondents (70.8%) felt that reduction in the 2nd year MBBS teaching hours will be

Table 1: Response of faculties to the questionnaire

Question (Total no. of respondents)	Response	Percentage of respondents
State/UT in which the institute is located (<i>n</i> =144)	Delhi	25.0
	Gujarat	12.5
	Maharashtra	11.1
	Tamil Nadu	8.3
	Other states/UTs	43.1
Post PG teaching experience (in years) in pharmacology (<i>n</i> =144)	≤5	22.2
	6–10	27.8
	11–15	19.4
	16–20	18.1
	>20	12.5
Are you aware about the recently introduced CBUG curriculum? (<i>n</i> =144)	Yes	90.3
	No	9.7
First source of information about the new curriculum (<i>n</i> =130)	Website/sensitization program	41.5
	Institutional authorities	30.8
	Others	27.7
Have you attended any conference/workshop/CME on the new MCI curriculum? (<i>n</i> =130)	Yes	69.2
	No	30.8
When will competency-based curriculum in Pharmacology discipline be implemented in your institute? (<i>n</i> =130)	Already implemented	5.8
	2019	24.6
	2020	67.7
	2021	2.5
Do you feel prepared enough to start the curriculum? (<i>n</i> =130)	Yes	49.2
	No	20.0
	Can't comment	30.8
If you don't feel prepared enough, please state the reasons (<i>n</i> =26)	Lack of training	69.2
	Inadequate number of faculty	11.5
	Lack of clarity in defining competency	11.5
	Absence of teaching module	7.8
Have you previously conducted or participated in multidisciplinary integrated teaching? (<i>n</i> =130)	Yes	78.5
	No	21.5
Do you think that students were benefited by such integration? (<i>n</i> =102)	Yes	90.2
	No	9.8
How was the benefit to students noticed? (<i>n</i> =92)	Improved exam scores	28.3
	Improved comprehension	50.0
	Student feedback	76.1
Do you think the high level of integration (both horizontal and vertical) for implementation of the new curriculum is feasible in your institute? (<i>n</i> =130)	Yes	64.6
	No	26.2
	Can't comment	9.2
Reasons for non-feasibility of implementation of the new curriculum in your institute (<i>n</i> =34)	Inadequate faculty	35.3
	Lack of interdepartmental coordination	17.7
	Institute's MEU not being effective	17.7
Do you think the shorter duration of 2nd year MBBS course will benefit the students? (<i>n</i> =130)	Lack of enthusiasm of senior faculty	11.8
	Yes	29.2
	No	70.8
Do you think that the current textbooks of Pharmacology can help students to learn and gain all the level of competencies as per revised MCI curriculum? (<i>n</i> =130)	Yes	46.1
	No	53.9

MCI: Medical Council of India, PG: Postgraduate, MEU: Medical Education Unit

inadequate to complete the pharmacology syllabus. The questionnaire included a question regarding the adequacy of the available textbooks of pharmacology to teach CBUG. Many respondents (53.9%) felt that the current text books are inadequate and needs modification. In another question, on a scale of ten, the rating of the respondents for new curriculum (6.83) did not show any statistical difference against old one (6.25) ($P = 0.96$).

DISCUSSION

The MCI guidelines on CBME for training of medical undergraduates are indeed a welcome move. However, the perception of the faculties, the key stakeholder, on CBME has remained unexplored. In our knowledge, this questionnaire based study is first of its kind to assess the perception and preparedness of faculty of pharmacology towards the recent MCI guidelines on CBME.

The response rate of the pharmacology faculties in the present survey was low (10.11%) despite a gentle reminder. In contrast, another study conducted at the College of Dentistry of Taibah University, Almadinah Almunawwarah, KSA, reported higher (63%) response rate as it involved faculty of a single institution.^[6] The poor response rate in our study may be due to the fact that the email addresses obtained were not verified.

About half of participants in our survey were from Delhi (25%), Gujarat (12.5%), and Maharashtra (11.1%). This possibly indicates the prevalent interest and awareness among the faculty of these states towards CBME. Around one-third of the participants were senior faculty members having 6–10 years of post PG experience, reflecting that teachers with considerable experience were more acquainted with CBME.

Most of the participants were aware of the CBME implementation and half of them credited their awareness to the CMEs and workshops on the subject. This reflects the importance of exposure to workshop sessions and training programs for the faculty development.^[7] Half of the participants opined that they are prepared to implement the new CBME. Rest of the participants (20.0%) were unprepared due to the inadequate teaching facility, non-availability of teaching modules, and scarce resources for the implementation. This suggested the unmet need to organize workshops and teacher training sessions on CBME for the faculty ensuring its effective implementation. Further, inadequate infrastructure was also identified as one the key constraint for its implementation.

About two-thirds of participants in our study acknowledged that they have previously conducted some form of integrated teaching along with subject of pharmacology. Of these majority (90.2%) accepted that it was beneficial for students which was indicated by student feedback and improved examination

scores. These findings highlight the previous experience of faculty in conducting collaborated teaching, although in non-systematic ways. It also indicates that students do welcome such collaborative learning experiences. This is in alignment with a study conducted in Caribbean Medical School in which students showed positive opinion for integrated teaching.^[8] Majority of our participants agreed that both horizontal and vertical integrations were feasible to carry out in their institutes. About one-third of total participants was not confident in CBME execution probably due to lack of faculty, inadequate interdisciplinary coordination, and non-functional medical education unit. It is appropriate to note that all of these factors can be mitigated at the institutional level. Every institution may form a multidisciplinary teaching implementation committee for smooth implementation of the program.^[9,10]

About two-third of faculties stated that reduction of time duration to teach the subject of pharmacology from ½ years–1 year is insufficient. About half of the participants opined that the current text books of pharmacology are not updated to provide material compliant to new CBUG. This is an important finding as both factors of time and structured subject content are of key importance for the success of adequate subject knowledge and skill gained by the students. Academic experts are expected to note these findings and consider further steps ahead to address.

CONCLUSION

Our study provides the current snapshot of perception and preparedness of pharmacology faculty toward the new MCI recommended CBME curriculum. Most of the participants in this study welcomed the new curriculum indicating their awareness and alacrity for implementation, although majority suggested the need for more training and strategic guidance to the faculty both at institute and national levels. To further understand these requirements, national organizations in the subject and MCI may conduct larger studies in the wide network of institutes across the nation, mandating the participation of larger group of faculty.

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