ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

https://nams-annals.in

Annals of the National Academy of Medical Sciences (India)

Original Article

Perspectives of Indian medical students regarding the competency based medical education curriculum – A qualitative, manual, theoretical thematic content analysis

Jeevithan Shanmugam[1], Rashmi Ramanathan[2], Mohan Kumar[1], Magadi Gopalakrishna Sridhar[3], Kalanithi Thaneerpandal Palanisamy[4], Seetharaman Narayanan[1]

[1]Departments of Community Medicine, [2]Physiology, [3]Biochemistry, [4]Internal Medicine, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India.

ABSTRACT

Objective: A competency-based undergraduate curriculum for the Indian Medical Graduates has been introduced since August 2019. The objective of this study was to capture the perspectives of students regarding the competency-based medical education curriculum.

Material and Methods: We present the qualitative findings from a multicentric cross-sectional study conducted among first-year MBBS students of selected medical colleges in India (2019–2020 batch) enrolled using a multistage random sampling method between February and March 2020. Qualitative data were analyzed using manual, theoretical thematic content analysis following the steps endorsed in Braun and Clarke's six-phase framework.

Results: Of the 336 medical students, 175 (52.1%) were from the government and 154 (45.8%) were from private medical colleges. The initiatives that were perceived to be most useful by students were sports, including extracurricular activities; attitude, ethics and communication (AETCOM) modules; yoga sessions;field visits; and skills modules (especially basic life support training). The duration of the foundation course, documentation of early clinical exposure, self-directed learning in the form of logbooks, records and related assignments for each subject, and pattern of assessment methods were initiatives that required modifications from student's perspective. Also, the suggestions provided by students to improve the curriculum has been summarized in this article that included changes in pattern of question papers, introducing skill certification, capturing subject based – student centered reflections, making available a mental health counselor, introducing literary clubs, and inter medical college visits.

Conclusion: The introduction of competency based medical education for undergraduate curriculum is a step in the right direction. But the need of the hour is to continuously adapt – based on the experiences of teachers, administrators, other stakeholders and students in particular.

Keywords: Competency based medical education, Medical education, India, Students, Qualitative

INTRODUCTION

Medical education is under constant evolution.[1] In 1910, Abraham Flexner proposed a model of medical education where scientific knowledge of biological understanding was given importance at the expense of its social and humanistic characteristics.[2,3] Hugh Rodman and E. Gurney Clark, in the mid-1950s introduced the concept of a natural history of disease and urged the physicians to differentiate and understand the individual illness from community health problems.[4,5] The concept of medical education further evolved when H.L. Blum and Marc Lalonde introduced a model where health processes depended on four groups of factors, namely genetics, behavior, health services and the environment.[6] The later modifications in the medical curriculum were aligned with the principles of the Alma Ata declaration (1978) and the Ottawa charter (1986).[4,7,8]

In India, the history of medical education can be traced back to the era of Charaka and Sushrutha, who had their own doctrines in treating and teaching indigenous systems of medicine. However, it was during the British rule when Indians received formal training in medical science in the backdrop of colonialism and hegemony. Though the country

***Corresponding author:** Jeevithan Shanmugam, Department of Community Medicine, KMCH Institute of Health Sciences and Research, Coimbatore, India. dr.jeevithan@gmail.com

Received: 27 November 2023 **Accepted:** 31 May 2024 **EPub Ahead of Print:** 21 August 2024 **Published:** 27 September 2024 **DOI** 10.25259/ANAMS-2023-6-14-(965) **Supplementary available on:** https://doi.org/10.25259/ANAMS-2023-6-14-(965)

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 License, which allows others to remix, transform, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms. ©2024 Published by Scientific Scholar on behalf of Annals of the National Academy of Medical Sciences (India)

succeeded in establishing government and private medical colleges across the country to meet the societal need of doctors, who were exceptional in the management of diseases but failed in providing healthcare that is comprehensive – preventive, promotive, curative, rehabilitative and palliative.[9,10] The National Medical Commission (NMC) commenced the new competency-based medical education (CBME) in August 2019 with the objective of covering all three domains of learning – cognitive, affective and psychomotor.[9,11] The set of core competencies expected from an Indian Medical Graduate (IMG) are being a clinician, lifelong learner, communicator, leader and professional.[12-14] This provides an effective outcome-based, student-centered strategy for medical education. A module on attitude, ethics and communication (AETCOM) has been introduced as a forerunner in the transition to CBME for undergraduates.[15] CBME also includes foundation courses, early clinical exposure and integration, self-directed learning, electives, a family adoption program, revamped examination, and assessment patterns.[16-20] However, the perspectives of students (in terms of usefulness, shortcomings, and suggestions) regarding the newly introduced competency-based medical education curriculum is yet to be documented. Against this background, the objective of this study was to capture perspectives of students regarding the competency-based medical education curriculum.

MATERIAL AND METHODS

We present the qualitative findings from a multicentric cross-sectional study conducted among first-year MBBS students in India (2019–2020 batch), between February and March 2020. Detailed study methodology has been published earlier.[21] In short, the study adopted a multistage random sampling method – of the total 542 medical colleges in India, 420 were listed (standalone postgraduate institutes and those colleges awaiting recognition were excluded). In the next step, 74 medical colleges were selected by simple random sampling (lottery method). In the final step, we implemented universal sampling and enrolled all first year students of these 74 medical colleges – provided that they consented to participate in the study. A total of 987 students participated in the study. The earlier publication focuses on perspectives of teachers at medial colleges and these data were different from what is being presented in the present manuscript.[21]

The study incorporated a predesigned, semi-structured, pre-tested questionnaire that included both open- and closed-ended questions to elicit learners' perceptions on various facets of a competency-based undergraduate curriculum. The data collection was done using the Google Forms online survey platform. Out of total 987 participants, 336 (34.0%) responded to the open-ended questions – sessions or initiatives in the curriculum that were perceived to be most useful or that require modification or withdrawal, and suggestions to improve the curriculum from the student's perspective were captured.

We analyzed this qualitative data using manual, theoretical thematic content analysis following the steps endorsed in Braun and Clarke's six-phase framework.[22,23] We read and re-read the transcripts to ensure familiarity with the data corpus and any other data being used for the purpose. Also, we made notes and jotted down early impressions. We then organized our data in a systematic, meaningful way by generating codes. Because each open-ended question was thematically enquired about, the data were thematically sorted to start with. However, we ensured whether the data supports these themes, we are trying to fit too much into a theme, there are any overlaps, any sub themes within predetermined themes, or other novel themes within the data. The results were presented according to themes (n = 3). Under each theme, codes and supportive manually chosen verbatims were provided.

The study was approved by the Institute Human Ethics Committee, KMCH Institute of Health Sciences and Research, Coimbatore, Tamil Nadu, India (IHEC/04/2020). The Participant Information Sheet (PIS) in English language was provided to the study participants digitally, and they were enrolled in the study only after obtaining informed digital consent.

RESULTS

The results included perspectives of 336 medical students on the newly introduced CBME curriculum. Of the 336 medical students, 175 (52.1%) were from government medical colleges, and 154 (45.8%) were from private medical colleges [related data was missing for 7 participants (2.1%)].

Theme 1 – Initiatives that were perceived to be most useful by students: The initiatives found useful by medical students are presented in Table 1 in order of their preference. Sports, including extracurricular activities were mandated (sports, four hours per week; extracurricular activities, two hours per week) as a part of the Foundation course. Students felt that these sessions relived them of stress, which in turn increased their concentration and efficiency while reading, helped them in building relationships, and instilled confidence. Attitude, Ethics, and Communication (AETCOM) sessions were able to sensitize students of their responsibilities – being an observer and a performer for the same or similar scenario helped students in scenario analysis and introspection [Table 1].

The students perceive that early clinical exposure is aiding them in clinically correlating the concepts taught in basic sciences. Specific mentions were provided for sessions that stressed the importance of documentation in the existing

Table 1: Initiatives that were perceived to be most useful by students.

Codes	Participant responses (verbatims)
Sports	Verbatim 1.1: *"Physical Education gave us some leisure time to relax; actually, it increased our efficiency while reading"* Verbatim 1.2: *"Sports helped me connect with my batchmates better"* Verbatim 1.3: *"Sports and games should be a part of curriculum throughout the entire period of MBBS education"*
Ice breaking session	Verbatim 1.4: *"Ice breaking sessions because it made us to express ourselves"* Verbatim 1.5: *"My batchmates became familiar to me through various interactive sessions and especially the ice breaker session helped me open up"*
AETCOM	Verbatim 1.6: *"I have interacted with doctors before for personal illness; but to observe a doctor patient interaction knowing that I am going to be a doctor made me understand the responsibilities I have"* Verbatim 1.7: *"Though the sessions are simulated, I am able to understand my shortcomings in communication skills. I gain confidence in my communication skills with each session"* Verbatim 1.8: *"The session on how to break bad news was useful"*
Yoga	Verbatim 1.9: *"The talk on yoga and its demonstration was useful. But it would be very helpful if an expert can guide us on a daily basis (at least for 15 minutes)"*
Visits	Verbatim 1.10: *"I usually come across various health centers in my locality. But never understood its importance. After visiting the nearby PHC with community medicine faculty I realized the importance of health centers in providing healthcare service"*
All	Verbatim 1.11: *"The session on disability competencies made me realize the huge population with disabilities and their special needs"* Verbatim 1.12: *"Foundation course helped me to adapt to this college easily"*
Experiences	Verbatim 1.13: *"I found inviting eminent doctors who are excelling their role for a talk with us very inspiring"* Verbatim 1.14: *"The visit of the eminent Doctors, they themselves sharing their views and their experiences, what it takes to be a Doctor, what it takes to become 'The Fittest Doctor', how to manage the critical complaints posted against the treating Doctors by the patient attenders was very useful"*
BLS	Verbatim 1.15: *"Learning CPR technique and BLS gave me confidence. It felt doctorish"*

MBBS: Bachelor of medicine, bachelor of surgery, AETCOM: Attitude ethics and communication, BLS: Basic life support, PHC: Primary health center, CPR: Cardiopulmonary resuscitation

scenario of doctor-patient relationship and/or violence; patients' perspective of disease, their aversion or anxiousness against hospital and doctors; doctors having a patient perspective, need for empathy; disability competencies; gender sensitization; and lived experiences of eminent doctors. Students also perceived that the visits within the medical college and hospital campus helped them understand the coordinated functioning of a hospital ecosystem.

Initiatives and/or aspects in CBME curriculum that requires modification – students perspective: The idea of a foundation course is exemplary. However, students perceived that the duration is one month, adding stress and creating aversion towards the subject and curriculum. Students perceived that the effectiveness of self-directed learning largely depends on their colleagues who may or may not prepare for any particular session. Provided that the documentation of self-directed learning is similar to assignments, students prefer only assignments to self-directed learning [Table 2].

Regarding the pattern of assessment in the new curriculum, students perceive that exams of 100 marks would be difficult to complete in three hours – suggesting a reduction in total marks of assessment (to 50 marks) or substantially increasing the multiple-choice questions in the assessment (MCQs for 50 and theoretical questions for 50). They also noted that this would benefit them in the long run in their preparation for NEXT exams.

The multitude of writing work has clearly added to the burden of medical students. They perceive that the write-ups being maintained for self-directed learning, early clinical exposure, logbooks, and record books for each subject do not add much to the objectives of a new curriculum. These are in addition to the regular assignments being provided after completion of each topic in each subject. However, few suggested that if these activities cannot be completely ignored, the mode of activity and submission can at least be made online – adding importance to other related objectives in the curriculum like enhancement of computer skills.

Suggestions to improve the curriculum from students' perspective: We have enumerated the suggestions provided by the students to improvise the curriculum as follows:

Table 2: Initiatives and/or aspects in CBME curriculum that requires modification – students perspective.

Codes	Participant responses (verbatims)
Sessions	**Foundation course** Verbatim 2.1: *"Being first batch who attended foundation course we want to say that after foundation course there is sudden burden of academics. It depresses many students in my batch who can perform extremely well but they can't do this thing due to sudden burden and phobia created by faculty"* Verbatim 2.2: *"Duration of foundation course can be reduced. Towards the end of the month, we found repetitive sessions boring"* **Self-directed learning** Verbatim 2.3: *"SDLs are similar to assignments so either one of the above needs to be removed. Assignments on specific topics with additional reference can be done. But such preparation in an SDL session is useless if others in the group do not prepare a prior"* **Others** Verbatim 2.4: *"The integrated sessions and ECE are really good. Helps us in better understanding. It makes us go to library and look for reference books. But the frequency of such sessions should be increased"* Verbatim 2.5: *"Visits show us the real-world scenario. Need more visits"*
Assessment pattern	**Regarding logbooks, records, and assignments** Verbatim 2.6: *"The maintenance of reflective writing for ECE and SDLs, logbooks, records for each subject is too much time consuming and it's actually a burden. I feel like I am just writing the whole day and night and not actually reading"* Verbatim 2.7: *"Assignments can be submitted through an online portal instead of being handwritten. This saves a lot of time as the current generation is more Tek savvy"* Verbatim 2.8: *"Record submission needn't be a criteria for assessment as only a few people are artistically inclined in medical colleges"* **Need for additional MCQs** Verbatim 2.9: *"I feel that multiple choice questions must be provided so that wide range of syllabus can be covered"* Verbatim 2.10: *"MCQs if provided right from the beginning will be very useful and help us preparing for NEXT in future"* **Regarding total marks and duration of examination** Verbatim 2.11: *"Writing a paper for 100 marks in 3 hours will not give us time to think logically. We will not be able to correlate for answers. Quality will be compromised"* Verbatim 2.12: *"Please help us with writing 100 marks paper. It's really not easy for me to write such lengthy paper in a stipulated time"*

SDL: Self-directed learning, ECE: Early clinical exposure, MCQs: Multiple choice questions, NEXT: National exit test

- Introducing two-mark questions in the question papers asking for concepts to be explained in words or pictures or flow diagrams should be explored.
- The possibility of having each theory class for a maximum of 45 minutes and utilizing the next 15 minutes in the assessment of the then-conducted session should be explored
- To complement the introduction of integrated teaching and early clinical exposure, the question papers for summative and internal assessments should be made integrated and not as separate subject papers.
- The concept of skill certification (for example, 'basic suture techniques trained' certificate, 'intravenous catheterization trained' certificate, 'electrocardiogram interpretation trained' certificate) should be implemented
- In addition to session-based reflections, subject based–student centered reflections should be encouraged
- The internal marks should not just be cumulative of all internal assessments but should also include assessment of activities like seminars, case presentations, participation and involvement in creative works, projects, early clinical exposure focus group discussions, field trips and sports.
- The curriculum is being perceived as stressful, and students opined that a counselor should be available in the academic wing of each medical college. This is in addition to the mentor assigned to each student.
- Students appreciated the introduction of local and English language programs. However, they stressed the need to sustain these initiatives beyond foundation courses by starting formal literary clubs in medical colleges.
- During the course of the curriculum, students must be made aware of (and preferably to handle) the routine machines used in a hospital setting (can be a pulse oximeter ranging up to automated external defibrillator or ventilator).
- The possibility of mandating a research project (or thesis) during the tenure of MBBS, along with training in basic research methods, should be explored. This may inculcate the habit of scientific thinking and reasoning of concepts and facts they read.

- Along with early clinical exposure students must be provided with clinical scenario banks.
- In routine practice, small groups or batches are divided in accordance with roll numbers. However, students expressed concerns that such grouping limits their interaction with various other individuals in the batch, resulting in monotonicity (interaction is limited to the same set of students) – groups based on random numbers can be preferred
- The possibility of having inter-college visits for medical students – to understand the learning environment and sharing experiences should be explored
- Sessions on stress management, time management, talks from eminent speakers, activities like sports and yoga should be sustained across all phases

DISCUSSION

The study documents the perspectives of the 2019–2020 batch of medical students in selected medical colleges of India regarding the competency-based medical education curriculum – initiatives that were perceived to be most useful, that require modification and their suggestions to improve the curriculum.

Students perceived that the introduction of mandatory sports and extra-curricular activity sessions in the foundation course was the most useful.[17] However, they recommended that these sessions should be sustained across all phases of medical education. Literary evidence also supports such a notion – sports help an individual much more than in the physical aspects alone; it builds character, teaches, and develops strategic thinking, analytical thinking, leadership skills, goal setting and risk-taking.[24-26] A recent publication highlighted that the majority of Phase I MBBS students (83.6%) were academically stressed, and around 90.0% opined that additional time within the curriculum should be allotted for sports and extra-curricular activities.[21] The AETCOM modules were well received by the students. The basic principle of these modules is that a change in a person's attitude may change his or her own behavior.[15] This attitude may in turn be directed by cognitive and affective attitudes. It is important to note that ethical dimensions play a crucial role in the behavioral evolution of an individual, and the basic building block of effective communication is the feeling that every human being is unique and of value.[27] The visits to Anganwadi centers, subcenters, and primary and community health centers had the ability to orient students to the existing public healthcare service delivery system in the country. Interaction with healthcare providers, patients and their families were also a part of these visits. An earlier publication also highlighted that the majority of the students had a positive feedback on field visits at the start of their medical education.

The objective of a foundation course at the start of MBBS course is to sensitize the incoming medical students with the required knowledge and skills – assisting him or her to acclimatize to the new professional environment. However, the minimum required components of a foundation course (orientation, skills module, field visits and professional development including ethics) and levels of flexibility provided for local adaption has made sure that students are intimidated by the medical education.[28] It is the need of the hour to enlist items that students should be made aware of, trained in at the start of medical education from those that they will be made aware of or trained in during the subsequent phases of medical education. The difference in conducting self-directed learning sessions and routine assignments, and their evaluation should be explicitly spelled in the CBME curriculum. Also, students perceive that documenting early clinical exposure, SDLs in the form of logbooks, records and related assignments for each subject is a burden in terms of effort and time, without adding much to the learning component. The new curriculum should work out the initiatives from a value for time perspective as well. Students have also stressed upon the pattern of examination proposed in the CBME curriculum. In short, they perceive that the total marks of each examination should be reduced, and number of MCQs should be increased. It should also be documented that CBME faces several challenges. It includes (but not limited to) lack of norms regarding the number and composition (in terms of qualification and eligibility) of faculty in each medical institution; higher student to teacher ratio in medical colleges; inadequate training of medical faculty in implementing the CBME curriculum; lack of adequate infrastructure to teach students in multiple small groups and parallel assessments; and importantly, lack of time for an effective, complete implementation.[9]

The study is not without limitations. First, to ensure a sample that is externally valid, we used Google Forms to reach students across the country (various districts and States) – in-depth interviews or focused group discussions would have been better. Second, only 336 of the total 987 participants documented their perceptions regarding the competency-based medical education curriculum (34.0%). However, being a qualitative study data saturation was observed within the available responses. Third, the nature of study implementation (web-based survey) would have resulted in volunteer bias and/or reporting bias. Also, these may have limited the generalizability of the study findings. Fourth, the study captures the perspectives of Phase I MBBS students only – their perspectives may be limited only to the initiatives in Phase I – but the CBME curriculum covers the entire duration of medical education, including internship.

Finally, the present study did not collect information regarding the provisions of the medical colleges towards CBME.

CONCLUSION

The introduction of competency based medical education for undergraduate curriculum is a step in the right direction. But the need of the hour is to continuously adapt – based on experiences of teachers, administrators, other stakeholders and students in particular.

Ethical approval

The research/study was approved by the Institute Human Ethics Committee at KMCH Institute of Health Sciences and Research, number (IHEC/04/2020), Coimbatore, Tamil Nadu, India.

Declaration patient consent

The authors certify that they have obtained all appropriate patient consent.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

REFERENCES

1. Norman G. Medical education: Past, present and future. Perspect Med Educ 2012;1:6–14.
2. Duffy TP. The Flexner Report--100 years later. Yale J Biol Med 2011;84:269–76.
3. Markel H. Abraham flexner and his remarkable report on medical education: A century later. JAMA2010;303:888–90.
4. Quintero-Hernandez G-A. Medical education and the healthcare system - why does the curriculum need to be reformed? BMC Medicine 2014;12:213.
5. Laevell H, Clark E. Preventive medicine for the doctor and the community New York: McGraw-Hill; 1953.
6. TH T. - Marc Lalonde, the health field concept and health promotion. Case Studies in Public Health 2018:30.
7. World Health Organization. Declaration of alma-ata. 1978.
8. Eriksson M, Lindström B. A salutogenic interpretation of the ottawa charter. Health Promot Int 2008;23:190–9.
9. Kulkarni P, Pushpalatha K, Bhat D. Medical education in India: Past, present, and future. Review article. APIK Journal of Internal Medicine 2019;7:69–73.
10. Majumder AA, D'Souza U, Rahman S. Trends in medical education: Challenges and directions for need-based reforms of medical training in South-East Asia. Indian J Med Sci 2004;58:369–80.
11. Harris P, Snell L, Talbot M, Harden RM, Collaborators IC. Competency-based medical education: Implications for undergraduate programs. Medical Teacher 2010;32:646–50.
12. Medical Council of India. Competency based Undergraduate curriculum for the Indian Medical Graduate - Volume 3. [accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-III.pdf.
13. Medical Council of India. Competency based Undergraduate curriculum for the Indian Medical Graduate - Volume 2. [accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-II.pdf.
14. Medical Council of India. Competency based Undergraduate curriculum for the Indian Medical Graduate - Volume 1. [accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/01/UG-Curriculum-Vol-I.pdf.
15. Medical Council of India. Attitude, Ethics and Communication (AETCOM) Competencies for the Indian Medical Graduate. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/01/AETCOM_book.pdf.
16. Medical Council of India. Module on Electives for Undergraduate Medical Education Program. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/08/Electives-Module-20-05-2020.pdf
17. Medical Council of India. Foundation Course for the Undergraduate Medical Education Program. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/08/FOUNDATION-COURSE-MBBS-17.07.2019.pdf
18. Medical Council of India. Early Clinical Exposure for Undergraduate Medical Education Program. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/08/Early_Clinical_Exposure-MBBS-07.08.2019.pdf
19. Medical Council of India. Assessment Module for Undergraduate Medical Education. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/08/Module_Competence_based_02.09.2019.pdf
20. Medical Council of India. Alignment and Integration Module for Undergraduate Medical Education Program. [Accessed 14 Sep, 2022]. https://www.nmc.org.in/wp-content/uploads/2020/08/Alignment-and-Integration_03.10.2019.pdf
21. Ramanathan R, Shanmugam J, Gopalakrishna SM, Palanisami K, Narayanan S. Exploring the learners' perspectives on competency-based medical education. J Educ Health Promot 2021;10:109.
22. Braun V, Clarke V. Thematic analysis. American Psychological Association; 2012.
23. Maguire M, Delahunt B. Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. All Ireland Journal of Higher Education. 2017;9
24. Ghildiyal R. Role of sports in the development of an individual and role of psychology in sports. Mens Sana Monographs. 2015;13:165.

25. Patel MM. Sports & exercise: A healthy way to develop the personality. Research Journal of Arts, Management and Social Sciences 2018;203.
26. Gould D, Carson S. Life skills development through sport: Current status and future directions. International review of sport and exercise psychology 2008;1:58–78.
27. Zayapragassarazan Z, Kumar S, Kadambari D. Record review of feedback of participants on attitude, ethics and communication module (AETCOM) proposed by medical council of India (MCI). Online Submission 2019;11:43–8.
28. Khilnani AK, Patel J, Khilnani G. Students' feedback on the foundation course in competency based medical education curriculum. Int J Res Med Sci 2019;7:4408–9.

How to cite this article: Shanmugam J, Ramanathan R, Kumar M, Sridhar MG, Palanisami KT, Narayanan S. Perspectives of Indian medical students regarding the competency based medical education curriculum – A qualitative, manual, theoretical thematic content analysis. Ann Natl Acad Med Sci (India). 2024;60:206-12. doi: 10.25259/ANAMS-2023-6-14-(965)