

## Original Article

# Introduction of a 'Capsule-course' in Faculty Development Programme for the 'Tutors & Residents' in a Medical College of Kolkata

Munmun Das Sarkar<sup>1</sup>, Smita Damke<sup>2</sup>, Kuntala Ray<sup>3</sup>, Hironmoy Roy<sup>4</sup>

**Background :** In RBCW & CISP programmes (total 6 days workshop) faculties above the tier Assistant Professor gets only eligibility to participate. The tutors & residents of a department, who takes pivot role in practical/demonstration classes does not get scope to participate in NMC approved RBCW/CISP programmes. It makes a mandatory gap in faculties' knowledge-attitude-practice in successful implementation of CBME in department.

**Objectives :** (a) So this project was undertaken to implement a 'Capsule-course' in one-day orientation programme solely for the residents & tutors to sensitise them in relevant aspects of CBME, (b) to obtain immediate feedback for the workshop & (c) to assess the knowledge-attitude of their own perception after two months of the workshop

**Materials and Methods :** with proper approval, a one-day sensitization workshop on core aspects of CBME was arranged. Pre-test, post-test questionnaire were applied and feedback was taken from all participants. Forty (40) faculties participated in the workshop. After two months a self assessment questionnaire was introduced to assess their confidence/ ability level for CBME & its implementation.

**Results :** Total 40 fellows (18 demonstrators & 22 residents) joined the programme. During the workshop the pre-test & post test result showed statistically significant ( $p < 0.05$  at  $df = 19$ ) improvement in knowledge of the participants. On teachers' self assessment after two months of the workshop, it explored that fellows have initiated to frame learning objectives for their class ( $3.8 \pm 0.48$ ), carry on DOAP sessions ( $3.9 \pm 0.87$ ), providing effective feedback ( $4.2 \pm 0.483$ ) to the students etc.

**Conclusion :** The one-day sensitisation program imparted positive impact on development of knowledge and changes in attitude among the residents & tutors in their teaching of practical/ demonstration classes. Such One-day sensitization workshop may be arranged for Demonstrators/Tutors/residents of all disciplines. Customized Faculty Development programs may also be arranged as continued education programme or refresher course for all faculties after assessing the actual need and gap analysis.

[J Indian Med Assoc 2024; 122(3): 33-8]

**Key words :** Mini-RBCW, Mini-CISP, Faculty Development Programme, Refresher Module.

The medical education system all over the world is witnessing a paradigm shift from current/ traditional type of medical education to competency-based medical education. The Competency-based Medical Education (CBME) is an outcome-based approach to design, implementation, assessment and evaluation of a medical education program with an organized framework of competencies<sup>1-5</sup>.

The new Competency Based Medical Education (CBME) module for the undergraduate teaching has been mandated from the 2019 entrant batch in MBBS level. NMC has started the faculty developments programmes as- The RBCW/CISP programmes

### Editor's Comment :

- NMC has introduced the BCME (erstwhile RBCW) as well as CISP course for the faculties of medical colleges 'from and above the rank of Assistant Professors'. Unfortunately the residents, tutors, who used to take huge load of practical demonstration classes remains out of those exposures. So in this article authors tried to implement a one day exposure course as "capsule course" with selected topics of both BCME and CISP curriculum which can be two ways used — in one hand this curriculum can give a mini-exposure to residents and tutors and in other hand can be used as refresher for the other faculties.

(Revised Basic Course Workshops/ Curriculum Implementation Support Programmes) to sensitise the faculties regarding the new aspects of the CBME. Unfortunately the basic teachers (tutors & residents), who plays pivot role in teaching the practical classes and bed side clinics, are not allowed to participate in the training programme. So with different topics extracted from the RBCW & CISP programme, the a 'Capsule-course' to the tutors & residents has been planned and conducted as one day sensitisation in a medical college of Kolkata as the pilot work.

<sup>1</sup>MD, Professor, Department of Microbiology, Calcutta School of Tropical Medicine, Kolkata 700073

<sup>2</sup>MD, Professor, Department of Microbiology, Jawaharlal Nehru Medical College, Sawangi, Maharashtra 442005

<sup>3</sup>MD, Associate Professor, Department of Community Medicine, IPGME&R and SSKM Hospital, Kolkata 700020

<sup>4</sup>MD, Professor, Department of Anatomy, IPGME&R and SSKM Hospital, Kolkata 700020 and Corresponding Author

Received on : 28/02/2023

Accepted on : 01/04/2023

### AIMS AND OBJECTIVES

(1) To conduct one-day faculty development programme for the residents & tutors, to sensitize them for CBME & its implementation.

(2) To explore the feedback of the participants of the one-day faculty development programme, after the workshop.

(3) To explore the knowledge & attitude of the participants of the one-day faculty development programme, after two months of the workshop.

### MATERIALS AND METHODS

- **Study design** : Longitudinal study.
- **Study setting** : Institution based, done in Calcutta National Medical College, West Bengal.
- **Study duration** : Six (06) months
- **Study participants & sampling** : tutors and residents of different disciplines were approached to be included in the work. For feasibility, tutors and residents of the pre & para-clinical disciplines were approached to be included in this work. Thus, total 40 participants were enrolled as first come-first serve basis.

- **Data collection method:**

As this was the project of Advanced Course in Medical Education under Jawaharlal Nehru Medical College NMC Nodal Centre, Sawangi, Maharashtra; so at first approval was obtained from them. Then, necessary permissions were obtained from the Principal, Calcutta National Medical College (CNMC), Kolkata and the Ethics Committee of the CNMC (Letter no. Microbiology CNMC 97 dt. 26/11/2020), Kolkata.

A team was built with the help of the members of Medical Education Unit of CNMC. The topics to be covered in the one day workshop were thoroughly discussed and finalised. Opinions were also taken from the experts in the field of medical education from other institutions to finalise the topics and their sequences.

Once the participants got finalised and logistics got approved from the college authority, the one day workshop on core aspects of CBME was arranged with the programme schedule as —

At the beginning of the programme and at the end of the programme, the participants were subjected to Pre-test and post-test with a predesigned pre-tested questionnaire to evaluate the changes in knowledge resulting from the workshop.

Feedback regarding the sensitization program was also taken from the attendees.

After two months time a cross sectional survey was carried on using a pretested

predesigned semi-structured questionnaire amongst all the participant faculties and residents; ensuring the anonymity; upon their knowledge of CBME curriculum, attitude for implementation as well as planning to implement CBME curriculum and perceived constraints towards implementation. The responses received were recorded and analysed using Microsoft Excel sheet and suitable statistical tool.

- **Data analysis:** The responses received in pre-test and post-test survey during sensitization program, filled in Feedback form and preparedness perception assessment survey questionnaire have been analyzed using Microsoft Excel sheet and suitable statistical tool.

### RESULT

Total 40 faculties participated in the one day sensitisation programme. Among them 22 were residents and 18 were demonstrators/ tutors of different disciplines.

#### Pre-test & Post test :

Paired t-test has been conducted with the mean value of pre-test and post-test of the itemwise correct responses. It has been seen that the t-value is 9.4516 with  $p < 0.05$  at  $df = 19$ . So the increment between the score of the pre-test *versus* post-test is statistically significant in this case. From the pre-test & post-test results detailed in Table 1, it is evident that there is considerable increase in correct response against all 20 questions answered by the participants.

The improvement of knowledge of the participants after the sensitisation programme was statistically significant ( $p < 0.05$  at  $df = 19$ ). From this it may be concluded that the one day sensitisation program successfully achieved its objectives (Table 1, Fig 1).

Time	Topic	Duration
9.15 am	Registration	15 minutes
9.30 am to 9.45 am	Pre test survey	15 minutes
9.45 am to 10.00 am	Ice breaking and Group Dynamics	15 minutes
10.00 am to 10.30 am	Brief introduction of CBME	30 minutes
10.30 am to 11.00 am	CBME module- how to read it?	30 minutes
11.00 am to 11.15 am	Tea Break	15 minutes
11.15 am to 11.45 am	Domains of learning & Millar's pyramid	30 minutes
11.45 am to 12.15 pm	SLO making from competency	30 minutes
12.15 pm to 01.15 pm	SLO making - <i>Workshop</i> in groups	01.00 hour
01.15 pm to 2.00 pm	DOAP & other interactive teaching methods in SGT & practical sessions ( <i>TL methods implacable for practical/ demonstration classes</i> )	45 minutes
2.00 pm to 2.30 pm	Lunch	30 minutes
2.30 pm to 3.00 pm	Assessment methods aligning to CBME	30 minutes
3.00 pm to 3.30 pm	How to frame checklist & conduct OSPE? - <i>Workshop</i>	30 minutes
3.30 pm to 3.45 pm	Tea Break	15 minutes
3.45 pm to 4.15 pm	How to give an effective feedback to the student?	30 minutes
4.15 pm to 4.30 pm	Exit ticket- the way to improvise ourselves	15 minutes
4.30 pm to 5 pm	Closure & valedictory	

Table 1 — Comparison of the item wise correct responses by the participants in Pre & Post Test, on the day of the workshop held [Multiple Choice question] (N=40)

Question	Correct responses in Pre-test	%	Correct responses in Post test	%
The full form of <b>CBME</b> is	34	85.0%	39	97.5%
Which of the <b>5 roles</b> of Indian Medical Graduate are defined by Medical Council of India	17	42.5%	37	92.5%
The <b>goal</b> of undergraduate medical education in India is to produce the professionals, who can	30	75.0%	39	97.5%
For traditional system of examination which statement lies <b>false</b> ?	11	27.5%	33	82.5%
<b>Competency</b> is the measurable sets of knowledge, skill and	9	22.5%	37	92.5%
Acronym for <b>OSCE</b> stands for	17	42.5%	36	90.0%
Cognitive Domain involves all <b>except</b>	11	27.5%	38	95.0%
All are the examples of self-directed learning <b>except</b>	29	72.5%	39	97.5%
The most suitable statement regarding Modified Essay Question	12	30.0%	38	95.0%
All are the examples of Teaching Learning Methods, except	13	32.5%	39	97.5%
As per the present assessment system which statement is <b>false</b> ?	3	7.5%	35	87.5%
Advantages of 'Traditional Lecture' are all <b>except</b>	22	55.0%	36	90.0%
For preparation of a good power point presentation, one must look into all <b>except</b>	21	52.5%	38	95.0%
True for 'small group discussion' are all <b>except</b>	17	42.5%	38	95.0%
Which of the following is <b>NOT</b> a component of SLO (Specific Learning Objective)	2	5.0%	37	92.5%
In a University Examination MCQ type question should be	17	42.5%	31	77.5%
Feedback should not be	28	70.0%	37	92.5%
For Practical Class DOAP session is often suggested, it includes all <b>except</b>	34	85.0%	40	100.0%
The CBME module directly tells us all <b>except</b>	2	5.0%	32	80.0%
If, for a competency the action verbs are "identify & describe", domain mentioned "skill", then which of the following is not appropriate?	25	62.5%	37	92.5%

Group	Pre-test	Post-test	Value of Paired T-Test
Mean	17.70	36.80	t = 9.4516, with df
SD	10.08	2.42	(degree of freedom)= 19
	p<0.05		

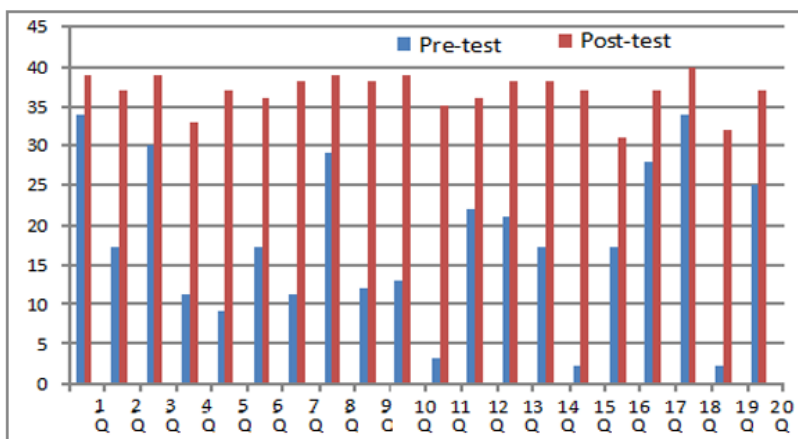


Fig 1 — Scores of Pre & Post-test of the participants

**Feedback for the Workshop :**

At the end of the one day sensitisation programme the participants were asked to submit feedback on the following two aspects for each session:- "How far do you feel knowledgeable for the session?"

Table 2 represents acquisition of knowledge on various aspects of the CBME curriculum during the sensitisation programme. The result shows that the participants felt that they had remarkable improvement of knowledge on this new curriculum. As per our assessment, the improvement of participants in every

session has been reflected by an increase of score, with an average percentage increment of 189.03.

**Knowledge - Attitude Assessment after Two Months of the Workshop :**

A cross sectional survey was conducted using a pretested predesigned semi-structured questionnaire among the participants upon their knowledge of CBME curriculum, attitude for implementation as well as planning to implement CBME curriculum and perceived constraints towards implementation. The responses received are tabulated as under Table 3.

**DISCUSSION**

This 'mini'- sensitisation workshop was conducted to sensitise the unsensitized faculties to run the CBME programme with highlights of the issues covered in revised basic Course workshop and the Curriculum Implementation Support Programme of NMC; with sole ambition to sensitise the tutors & residents.

There remains difference in perception regarding acquisition of knowledge (189.03%) of the lessons learnt in the different sessions. So, the feedback taken

Name of the Session	How Far do you feel knowledgeable for the session?		
	Before the session (mean score)	After the session (mean score)	% increased rate
Ice breaking & Group Dynamics	1.7	4.27	151.17
Brief introduction of CBME	1.4	4.42	215.71
Alignment & Integration	1.3	4.2	223.07
Domain's of learning & Millar's pyramid	0.85	3.97	367.05
SLO Making from competency (workshop)	0.9	3.7	311.11
Newer teaching methods aligning to CBME	1.57	4.15	164.33
Assessment methods aligning to CBME	1.77	4.3	142.93
Importance of feedback in students assessment	2	4.2	110

In Table 2 the acquisition of knowledge on various aspects of the CBME curriculum during the sensitisation programme is detailed. The result shows that the participants felt that they had remarkable improvement of knowledge on this new curriculum. Overall percentage (%) of increment is 189.03%. As per our assessment, the improvement of participants in every session has been reflected by an increase of score, with an average percentage increment of 189.03.

is specific, directly linked to the purpose of learning and success criteria, could distinguish what learner has done well and could identify what has been misunderstood or not understood, focusing on the quality of the sensitization programme.

As regards the perception of participants regarding the multidisciplinary integrated teaching, though majority of them have never participated in such teaching activity before, but maximum participant felt positive regarding its benefit in students' education. Majority of them also believes that it is possible to adopt different modes of integrated teaching in their department. As per perception of the participants, such benefit can be best judged by data obtained from formative assessment ie, improved comprehension by students followed by Student's feedback and improved exam scores. It has also been observed that majority of participants believe that "giving and receiving Feedback" will definitely help to improve students' learning process.

The one-day sensitisation programme was organised just before the starting of the new curriculum-based Phase-2 MBBS programme to sensitise the faculties (mainly basic teachers/demonstrators) & residents of Phase-2, as per protocol who are not included in the NMC approved RBCW programme. Due to time constrain, some specific aspects of CBME could not be

included in the one-day sensitisation programme and some aspects could not be stressed properly, hence the attendees are clearly lacking both in acquisition of knowledge in some areas of the new curriculum as well as perception and preparedness regarding implementation of CBME curriculum in their respective discipline.

But, considering the positive impact achieved, such faculty development programmes can be arranged in addition to RBCW programme and also for the basic teachers (demonstrators/tutors) & residents across the different phases, who are not included in the regular faculty development programmes as

per protocol.

It the study of Howard Tandeter, *et al* (2014), importance of faculty development programme was stressed. Over 50% of respondents expressed interest in participating in most FD activities in most topics evaluated. The majority of teachers at medical schools in Israel lack formal training in areas considered essential to their academic performance. In spite of their high sense of competence they are interested in participating in FD activities<sup>2</sup>.

Shaifaly M Rustagi, *et al* reported in their study that the proper implementation of CBME would require

	Mean	SD
I can correctly appraise the learning need of the students	3.1	0.567646
I practice regularly to go through the CBME module in my discipline to get accustomed with the competencies given	3.3	0.674949
I can frame Specific learning objectives from a given competency maintaining its all ABCD component	3.8	0.483046
I always narrate the learning objective to the students in my class	3.5	0.707107
I practice regularly the lesson planning on the day before my class	3.2	0.421637
I practice regularly to address all four steps of DOAP to individual students in the demonstration class	3.9	0.875595
I practice regularly to arrange interactivity during the small group tutorial sessions allotted to me	3.1	0.567646
I practice regularly to collect anonymous 'exit ticket' from students after the class	4.1	0.674949
I can refine my teaching content & methods based on students' feedback	3.2	0.632456
I can frame the checklist for OSPE (aligning the SLOs) for assessment	3.1	0.737865
I practice to address comprehension-analysis-synthesis-application levels while assessing reasoning skill of the students	4.1	0.567646
I practice regularly to give effective feedback to every student whom I assess	4.2	0.483046
	3.508333	0.437884

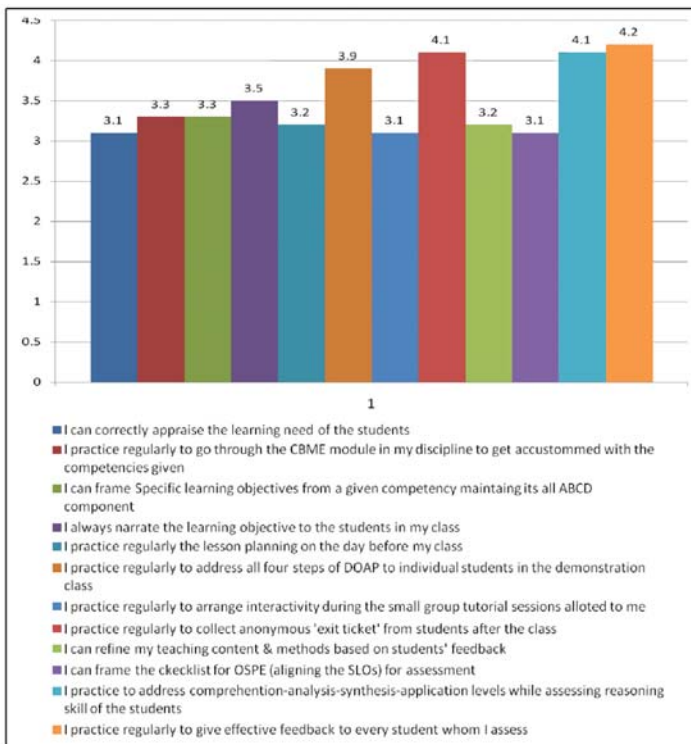


Fig 2 — Self-declaration of the practice of the participants

more clarity and continuous efforts by Medical Education Units (MEU) under guidance of the MCI to update their faculty in the form of Curriculum Implementation Support Programs (CISPs), Revised Basic Course Workshops (RBCWs) and advanced courses in medical education<sup>3</sup>.

Shrivastava SR, *et al* conducted a descriptive qualitative study among the faculty members of the community medicine department. A total of 20 responses were obtained pertaining to the key aspects of CBME, of which 12 were identified as the salient variables depending on the cut-off value of 0.125 (Smith's Saliency Score) and subjected to pile sorting. Eight challenges were identified in the implementation of the programme during the free listing and all were included in the second stage of pile sorting<sup>4</sup>.

In the year 2020, Ghosh A, *et al* reported that the faculties who lacked any form of training, may miss to implement many vital aspects of teaching learning and knowledge of new curriculum which is completely new with respect to the didactic and traditional curriculum in the background of which the last generation of faculties have been trained. They have also suggested a new combined (3 days) program combining the content of both RBCW and CISP programs for training of new medical faculties<sup>5</sup>.

Steve Mann, *et al* reported that Sixteen residents volunteered to participate in individual semi-structured

interviews, with questions focussing on participants' knowledge of CBME and its implementation. The Residents anticipated improved assessment and feedback, earlier identification of residents experiencing difficulties in training and greater flexibility to pursue self-identified educational needs<sup>6</sup>.

Shivani Upadhyaya, *et al* in their work explored that the Residents perceived aspects of this transformation as helpful but overall had mixed perceptions and variable understanding of the intended underlying framework. Understanding and disseminating successes and challenges from the resident lens may assist programs at different stages of CBME implementation<sup>7</sup>.

Rashmi Ramanathan, *et al* in their study conducted among 1st year MBBS students (2019-2020 batch) reported that total of 987 students from 74 medical colleges in India were included and nearly three fourths of the participants opined that Foundation Course (FC), attitude ethics communication module and early clinical exposure were necessary. Horizontal integration was more appreciated to vertical integration. Maintaining log books was perceived

as time consuming and cumbersome. Few reforms such as curtailing the duration of FC, diffuse sessions on stress and time management, better synchronized vertical integration, and an exemplary implementation of adult learning techniques can be undertaken<sup>8</sup>.

Tameem, *et al* conducted a Questionnaire based study among the faculty members of department of Physiology and revealed lack of sensitisation of stakeholders and inadequate planning were identified as the predominant challenges in the implementation of CBME<sup>9</sup>.

Dr. Sandeep Narwane, *et al* has reported that the responders perceived the new curriculum to have many advantages owing to introduction of competencies, horizontal and vertical integration as well as the AETCOM module. At the same time implementation of these curricula was opined to be a challenging task. The new curriculum also creates confusion and sense of inadequate arrangement<sup>10</sup>.

Faculty members at medical teaching institutions have diverse responsibilities, such as teaching, research, patient care related matters and administration. Unlike other teachers, medical graduates and post-graduates become faculty members at different medical teaching institutions and they are asked to take on academic duties for which they have received no formal training<sup>11</sup>. The task of teaching in general is complex and difficult. Clinical teaching is especially difficult. Medical teachers

are expected to address a wide range of educational goals (knowledge, attitude and skills); to work with learners who vary greatly in their experience and abilities; to use variety of teaching methods (Lecture, small group, one to one etc) and to teach in different settings (Lecture hall, practical class, skill lab, inpatient, outpatient and community settings). Faculty development helps ensure that the educational reforms and initiatives are worthy and implemented properly. Professional organizations and experts advocate greater awareness and acquisition of knowledge in teaching and learning through comprehensive faculty development<sup>12,13</sup>.

Therefore, in our study during the one-day sensitisation programme, pre-test and post-test was introduced to support the accomplishment of learning objectives with an improved understanding and to help the participants to focus on the key topics that were discussed and also to assess the knowledge gain during the programme. Feedback is a key element of the incremental process of ongoing learning. Providing feedback is a significant means of improving achievement in learning. It involves the provision of information about aspects of understanding and performance. Effective feedback is designed to determine a learner's level of understanding and skill development in order to plan the next steps towards achieving the learning intentions or goals.

#### CONCLUSION AND RECOMMENDATION

This study provides the current picture of perception and preparedness of residents & tutors toward the new CBME curriculum alongwith requirement for more need based and specific faculty development programmes. Although the basic teachers, the residents and tutors are playing the pivot role and primary-contact teachers to the students, but the laid rule of NMC is debarring them to get sensitised from the RBCW/CISP programmes. So in the institutional level such one day 'Capsule-course' model may be implemented, which also may be used as the refresher course to the already sensitised fellows in long run.

#### ACKNOWLEDGEMENT

The authors sincerely thanks to the faculties of Jawaharlal Nehru Medical College, Sawangi, Wardha, Maharashtra for their constant guidance in this project as the part of ACME (Advanced Course in Medical Education) programme. The authors convey their best regards to the Principal, Calcutta National Medical College; Dr Anindya Dasgupta, the the-then, MEU Co-ordinator, CNMC; Dr Satyajit Saha, Associate Professor, Department of Anatomy of Murshidabad Medical College (the the-then, member, CNMC); Prof Dr Parthapratim

Pradhan, Principal, College of Medicine and Sagore Datta Medical College & Hospital, Kamarhati.; Dr. Swati Bhattacharyya, Professor, Department of Biochemistry; Dr Debjani Sengupta, Assistant Professor, Department of Community Medicine; Dr Sanjib Bandyopadhyay, Associate Professor, Department of Community Medicine of Burdwan Medical College; Prof Sanhita Mukherjee, Department of Physiology, Rampurhat Govt Medical College; Dr Arup Chakraborty, Assistant Professor, Department of Community Medicine, Medical College, Kolkata, Mr. Chironjib Datta, MT(Lab); and last but not least Mr. Sudip Kumar Sarkar ; for their constant support and motivation to carry on the work. The authors also do acknowledge to the faculties who have participated in the project.

#### REFERENCES

- 1 Supe A — Graduate Medical Education Regulations 2019: Competency-driven contextual curriculum. *Natl Med J India* 2019; **32**: 257-61
- 2 Tandeter H, Castel OC, Nave R, Jotkowitz A — Needs Assessment for Faculty Development Activities in Medical Schools in Israel. *J Fam Med* 2014; **1(2)**: 1-3.
- 3 Rustagi SM, Mohan C, Verma N, Nair BR — Competency-based Medical Education: The Perceptions of Faculty. *Journal of Medical Academics* 2019; **2(1)**: 1-5.
- 4 Shrivastava SR, Shrivastava PS — Qualitative study to identify the perception and challenges faced by the faculty of community medicine in the implementation of competency-based medical education for postgraduate students. *Fam Med Com Health* 2019; **7**: 1-6.
- 5 Ghosh A, Bir A — Need of Evolution in MCI Teacher's Training Programs: Faculty Perceptions of a Tertiary Care Medical College in India. *J Evid Based Med Healthc* 2020; pISSN- 2349-2562, eISSN- 2349-2570/ Vol. 7/Issue 23/June 08, 2020, P 1113-8.
- 6 Mann S, Truelove AH, Beesle T, Howden S, Egan R — Resident perceptions of Competency-Based Medical Education. *Canadian Medical Education Journal* 2020; **11(5)**: e31-e43;
- 7 Upadhyaya S, Rashid M, Andrea Davila-Cervantes, Anna Oswald — Exploring resident perceptions of initial competency based medical education implementation. *Canadian Medical Education Journal* 2021; **12(2)**: e42-e56.
- 8 Ramanathan R, Shanmugam J, Gopalakrishna SM, Palanisami K, Narayanan S — Exploring the learners' perspectives on competency based medical education. *Journal of Education and Health Promotion* 2021; **10**: 1-6.
- 9 Tameem SN — Challenges in Implementation of the Competency Based Medical Education. *National Journal of Research in Community Medicine* 2021; **10(1)**: 12-5.
- 10 Narwane S, Anikhindi A, Mahavarakar V — Study of perceptions of Competency Based Medical Education reforms in India. *Pravara Med Rev* 2021; **13(02)**: 4 -13. DOI: 10.36848/PMR/2020/25100.51000;
- 11 Wilkerson L, Irby DM — Strategies for improving teaching practices: a comprehensive approach to faculty development. *Acad Med* 1998; **73**: 387-96.
- 12 Dimitrov DM, Rumrill Jr PD — Pre-test-post-test designs and measurement of change. *Work* 20 (2003) 159-165 IOS Press;
- 13 Shivaraju PT, Manu G, Vinaya M, Savkar MK — Evaluating the effectiveness of pre- and post-test model of learning in a medical school. *Natl J Physiol Pharm Pharmacol* 2017; **7(9)**: 947-51.