



ORIGINAL ARTICLE

Curricular reforms: A mixed method study to identify perceptions of students and faculty regarding implementation of FC in 1st year MBBS in an Indian medical

Neeraj Kumar Agrawal^{1*}, Anuradha Joshi², Sanjib Das, Uma Gupta³
¹Department of Pharmacology, Government Medical College, Ratlam, Madhyapradesh, India
²Department of Pharmacology, Pramukhswami Medical College, Anand, Gujarat, India
³Principal Investigator, Women Scientist Scheme-B under Department of Science & Technology, Department of Pharmacology, Government Medical College, Ratlam, Madhyapradesh, India

*Government Medical College, Ratlam, Banjali Road, Dist-Ratlam Madhyapradesh, Pin code-457001 India

Tel: +91 9927287472
 Fax: +91 7412284225
 Email: dmneer80@yahoo.com

Background: The year 2019 witnessed major curricular reforms in terms of launching Foundation Course (FC) by National Medical Commission (NMC) as a part of CBME (Competency Based Medical Education). Feedback from various stakeholders in medical education can register its merits and demerits. This study aimed to explore perceptions of students and faculties of 1st year MBBS, regarding implementation of FC.

Methods: A mixed-method study was employed immediately as post implementation of FC using a structured questionnaire and a focus group interview to report perception of students and faculties. Study was conducted in Government medical college & Hospital, Ratlam, Madhyapradesh India in September month of 2019.

Results: Majority of students i.e. 92.13 % felt, that FC orientation module helped them acclimatize to new environment and helped them engage with peers and faculties. 91.01% were sensitized to importance of professionalism and ethics in medicine. 92.68% reported an enhancement in their communication skills, 83.70% mentioned its help in stress management, 88.19% to 92.69% found reflective writing as an interesting exercise. Overall 87.00% graded FC as beneficial and a good program. Besides these sessions, an essential computer learning skills, community health care visit, sports, and extracurricular activities were appreciated. In addition, medical students gave mixed reviews on problems like duration of FC, didactic teaching, and language barriers in terms of English and local.

Conclusions: FC provides a roadmap from a knowledge centric curriculum towards a competency based performance centric curriculum. Facilitating and nurturing such programs can play a pivotal role in fostering holistic development of students.

Keywords: Competency Based Medical Education; FC; curricular reforms; Medical Curriculum; Indian medical graduates

اصلاحات برنامه درسی: مطالعه روشی ترکیبی برای شناسایی استنباط دانشجویان و اساتید در مورد اجرای دوره آموزشی مقدماتی در سال اول پزشکی در یک دانشکده پزشکی در هند

زمینه و هدف: سال 2019 اصلاحات اساسی در برنامه درسی در نظر راه اندازی دوره آموزشی مقدماتی توسط کمیسیون ملی پزشکی هند به عنوان بخشی از آموزش پزشکی مبتنی بر شایستگی صورت گرفت. گرفتن بازخورد از دست اندرکاران مختلف در آموزش پزشکی می تواند محاسن و معایب آن را مشخص کند. این مطالعه با هدف بررسی استنباط دانشجویان و اساتید سال اول دوره پزشکی عمومی در مورد اجرای دوره آموزشی مقدماتی در هند انجام شد.

روش: بلافاصله پس از اجرای دوره آموزشی مقدماتی، مطالعه ای ترکیبی با استفاده از یک پرسشنامه ساختاریافته و مصاحبه گروهی متمرکز برای گزارش ادراک دانشجویان و اساتید مورد استفاده قرار گرفت. مطالعه در بیمارستان دانشکده پزشکی دولتی راتلام، مادھپرادش هند در سپتامبر 2019 انجام شد.

یافته ها: 92/13 درصد دانشجویان احساس می کردند که پودمان دوره آموزشی مقدماتی به آنها کمک می کند تا با محیط جدید سازگار شوند و با همسالان و اساتید ارتباط برقرار کنند. 91/01 درصد به اهمیت حرفه ای بودن و اخلاق در پزشکی حساس بودند. 92/68 درصد افزایش مهارت های ارتباطی خود را گزارش کردند، 83/70 درصد کمک آن را در مدیریت استرس، 88/19 تا 92/69 درصد نوشتن متفکرانه را تمرینی جالب دانستند. به طور کلی 87/00 درصد دوره های مقدماتی را به عنوان برنامه ای مفید ارزیابی کردند. در کنار این جلسات، از مهارت های ضروری یادگیری کامپیوتر، بازدید از مراقبت های بهداشتی جامعه، ورزش و فعالیت های فوق برنامه قدرانی شد. دانشجویان پزشکی در مورد مشکلاتی مانند مدت زمان دوره های آموزشی مقدماتی، تدریس آموزشی و موانع مرتبط با زبان از نظر زبان انگلیسی و محلی نظرات متفاوتی ارائه کردند.

نتیجه گیری: دوره های آموزشی مقدماتی نقشه راه از یک برنامه درسی دانش محور به سمت برنامه درسی عملکرد محور مبتنی بر شایستگی ارائه می دهد. تسهیل چنین برنامه های نقشی محوری در پرورش رشد همه جانبه دانشجویان دارد.

واژه های کلیدی: آموزش پزشکی مبتنی بر شایستگی، دوره های آموزشی، اصلاحات درسی، برنامه درسی پزشکی، فارغ التحصیلان پزشکی هند

اصلاحات المناهج الدراسية: دراسة منهجية مختلطة لتحديد تصورات الطلاب وأعضاء هيئة التدريس فيما يتعلق بتنفيذ FC في السنة الأولى MBBS في كلية الطب الهندية

الخلفية: شهد عام 2019 إصلاحات كبيرة في المناهج الدراسية من حيث إطلاق الدورة التأسيسية (FC) من قبل اللجنة الطبية الوطنية (NMC) كجزء من CBME (التعليم الطبي القائم على الكفاءة). يمكن للتعليقات الواردة من مختلف أصحاب المصلحة في التعليم الطبي تسجيل مزاياها وعيوبها. تهدف هذه الدراسة إلى استكشاف تصورات الطلاب والكليات في السنة الأولى MBBS، فيما يتعلق بتنفيذ FC.

الطرق: تم استخدام دراسة مختلطة الطرق فوراً بعد تنفيذ التعلم المرين باستخدام استبيان منظم ومقابلة جماعية مركزية للإبلاغ عن تصور الطلاب والكليات. أجريت الدراسة في كلية الطب الحكومية ومستشفى راتلام، ماديراديش الهند في شهر سبتمبر من عام 2019.

النتائج: شعرت غالبية الطلاب، أي 92.13% أنوحدة توجيه FC ساعدتهم على التكيف مع البيئة الجديدة وساعدتهم على الانخراط مع أقرانهم وكلياتهم. 91.01% تمتوعت بمزايا أهمية الاعتراف بالأخلاق في الطب. ذكر 92.68% تحسني مهاراتهم الاتصال لديهم، و83.70% ذكروا مساعدهم في إدارة الضغط، 88.19% إلى 92.69% وجدوا الكتابة الانعكاسية تمريناً ممتعاً. إجمالي 87.00% متدرج FC على أنه برنامج مفيد وجيد. إلى جانب هذه الجلسات، تم تقدير دروس تعلم الكمبيوتر الأساسية وزيارة الرعاية الصحية المجتمعية والرياضة والأنشطة اللامنهجية. بالإضافة إلى ذلك، قدم طلاب الطب مراجعات مختلطة حول مشكلات مثل مدة التعلم المستمر والتدريس التربوي والحوار اللغوية من حيث اللغة الإنجليزية والمحلية.

الاستنتاجات: يوفر FC خارطة طريق من المناهج التي تركز على المعرفة نحو منهج يركز على الأداء القائم على الكفاءة. يمكن أن يلعب تيسير ورعاية مثل هذه البرامج دوراً محورياً في تعزيز التنمية الشاملة للطلاب.

الكلمات الأساسية: التعليم الطبي القائم على الكفاءة؛ دورة تدريبية؛ إصلاحات المناهج منهج طبي خريجي الطب الهنود

نصاب تعليم میں تبدیلیاں: ہندوستان کے ایک میڈیکل اسکول میں میڈیسن کے پہلے سال میں ابتدائی میڈیکل کورس کو لاگو کرنے کے لئے طلباء اور پروفیسرز کے تاثرات کی شناخت کے لیے ایک مشترکہ طریقہ مطالعہ

پس منظر اور مقصد: 2019 میں قابلیت پر مبنی طبی تربیت کے ایک حصے کے طور پر انڈین نیشنل میڈیکل کمیشن کی طرف سے ایک تعارفی تربیتی کورس شروع کرنے کے حوالے سے اہم نصابی اصلاحات دیکھنے میں آئیں۔ میڈیکل ایجوکیشن میں مختلف اسٹیک ہولڈرز سے رائے حاصل کرنے سے اس کے فوائد اور نقصانات کی نشاندہی کی جا سکتی ہے۔ اس مطالعہ کا مقصد ہندوستان میں تعارفی تربیتی کورس کے نفاذ کے بارے میں پہلے سال کے جنرل میڈیسن کے طلباء اور پروفیسرز کے نتائج کی چھان بین کرنا تھا۔

طریقہ: تعارفی تربیتی کورس کے فوراً بعد، طلبہ اور پروفیسرز کے تاثرات کو اطلاع دینے کے لیے ایک منظم سوالنامے کا استعمال کرتے ہوئے ایک مشترکہ مطالعہ اور ایک انٹرویو گروپ کا استعمال کیا گیا۔ یہ مطالعہ ستمبر 2019 میں رتلام اسٹیٹ میڈیکل اسکول اسپتال، انڈیا میں کیا گیا تھا۔

نتائج: 92.13% طلباء نے محسوس کیا کہ تعارفی کورس کا ماڈیول انہیں نئے ماحول کے مطابق ڈھالنے اور ساتھیوں اور پروفیسروں کے ساتھ بات چیت کرنے میں مدد کرتا ہے۔ 91.1% طلبہ میں پیشہ ورانہ مہارت اور اخلاقیات کی اہمیت کے بارے میں حساس تھے۔ 92.68% نے اپنی بات چیت کی مہارت میں اضافے کی اطلاع دی، 83.70% نے اسے تناؤ میں مددگار پایا، 88.19% سے 92.69% نے سوچا کہ لکھنا پڑھنا ایک دلچسپ مشق ہے۔ عام طور پر، 87.00% نے ایک مفید پروگرام کے طور پر تعارفی کورس کا جائزہ لیا۔ ان سیشنز کے علاوہ کمپیوٹر سیکھنے کی ضروری مہارت، کمیونٹی ہیلتھ ورک، کھیلوں اور غیر نصابی سرگرمیوں کو سراہا گیا۔ میڈیکل کے طلباء نے انگریزی اور مقامی زبان کے معاملے میں تعارفی کورس کی لمبائی، تدریسی ہدایات اور زبان سے متعلق رکاوٹوں جیسے مسائل پر مختلف خیالات کا اظہار کیا۔

نتیجہ: تعارفی کورس علم پر مبنی نصاب سے قابلیت پر مبنی کارکردگی پر مبنی نصاب تک پیش کرتے ہیں۔ ایسے پروگراموں کی سہولت طلباء کی مجموعی ترقی کو فروغ دینے میں اہم کردار ادا کر سکتی ہے۔

مطلوبہ الفاظ: قابلیت پر مبنی طبی تعلیم؛ تعلیمی کورسز؛ نصاب میں اصلاحات؛ طبی نصاب؛ ہندوستانی میڈیکل گریجویٹس

INTRODUCTION

The National Medical Commission (NMC) regulates graduate and postgraduate medical education in India. The primary aim of graduate medical education in India is to produce an Indian Medical Graduate (IMG) with specific qualities, channeling medical professionals to cater to primary healthcare. In context to this, recently NMC has formulated a new Competency Based Medical Education (CBME) Curriculum for the IMG with an objective of making medical education outcome based (1). Competency-based medical education (CBME) is an approach to ensure that the medical student develop those competencies which are desired to meet the needs of patients in a community and at the same time meet international standards (2,3). A total of five main roles of a medical graduate have been identified in CBME in the Indian set-up, namely *clinician, communicator, leader/member of the healthcare team, lifelong learner, and professionalism*(2). Thus CBME is crucial in the recent times as it negates the numerous limitations attributed to the traditional mode of education delivery.

Under the umbrella of CBME currently NMC has introduced and implemented FC in Indian undergraduate medical curriculum across all the medical colleges in India. This has been implemented from the admission year 2019, for first year MBBS in view of GMER 2019 (Graduate Medical Education Regulations) (4). The new curriculum aims at giving importance to ability of graduates to perform and be proficient in the given set of competencies, so as to deliver healthcare at all the required levels (5).

Previous curriculum mainly catered to subject and knowledge *per say as compared to* attitude and skills (6-9), this led to lack of basic clinical skills among graduates as well as lack of soft skills related to communication, doctor-patient relationship, ethics, and professionalism.

The purpose of FC as defined by the NMC is basically to orient medical students to all aspects of medical college environment, equipping them with certain basic, but important, skills required for patient care and enhancing their communication, language, computer and learning skills, providing opportunity for peer and faculty interactions and an overall sensitization to the various learning methodologies so that they can prepare a learner to study medicine effectively. In context to this, FC is divided into six modules i.e. orientation module, skills module, community and field visit, professional development and ethics, enhancement of language and computer skill module, sports and extracurricular activities (10).

Like every institute, at the present institute also FC was planned and implemented with the help of faculty of medical education and first year faculties. It was conducted from 1st August 2019 to 31st August 2019. A total of 175 hours were allotted to the various modules under FC as listed in National medical commission's document for FC (10). Since FC offers a transition from knowledge centric curriculum towards a competency based performance centric curriculum, there is likelihood of potential shortcomings & pitfalls which would inadvertently inflict a negative impact on student's learning (10). Therefore, the present researchers strongly believe that,

multiple feedbacks are required by various stakeholders at post implementation stage in order to make modification in the curriculum for its betterment and effectiveness. The current study is undertaken to explore the perceptions of the two major stakeholders of FC i.e. students and faculties of 1st year MBBS course.

METHODS

This was a cross-sectional, mixed method study conducted on first year MBBS students and faculties in one of the medical colleges in central India in year 2019, month of September. Pre-validated structured questionnaire based feedback were collected from both stakeholders as a source of quantitative data. For qualitative data, Focused Group Discussions were conducted involving students.

At the end of the FC of one month all the first year students (a total of 178) as well as first year faculties (Total 27 i.e. Professor- 9, Associate professor- 7, Assistant professor- 11.) were first asked to give their feedback using a pre-validated structured feedback questionnaire comprised of 16 and 13 questions for students & faculties respectively from all major subthemes with equal importance. Content validity of the feedback questionnaire was ensured by giving it to an expert panel comprised of 3 professors & 1 biostatistician from the same institute but not participated in this study. Cronbach alpha coefficient was calculated by using Siegle Reliability Calculator for estimating the reliability. Its value was 0.73 which comes under acceptable internal consistency of our research tool. The responses were tabulated on Microsoft excel sheets and analyzed. Questionnaire consisted of questions related to perception regarding FC program and its sessions under various modules. Feedback was assessed on five- point Likert rating scale (0 = strongly disagree; 1 = disagree; 2 = Neutral; 3 = agree; 4 = strongly agree). Both stakeholders were also asked to rate their overall experience on the entire program. Furthermore, suggestions for improvement were invited from both participants. The second type of questions were developed to tick the option/s about the Sessions most liked by first year MBBS students in entire FC (classroom and outside classroom sessions separately)

Subsequently two separate Focused Group Discussions (FGD) were conducted (11). Each consisted of eight students of 1st year MBBS with equal gender distribution, after 1 month of completion of FC, a FGD guide was used. A reasonably sized venue away from all distractions were chosen to conduct this study. All required materials like recording materials, consent form, name tags etc. were made available. FGD guide was framed by the principal and co-investigator before conducting the discussions. Before collecting the data, the researcher provided explanations about the goals, process and conditions of the interview. The participants were assured about the confidentiality; also, informed consent was obtained from them. After the participant's agreement interview was conducted in a relaxed and friendly environment. Duration of each FGD was 45-50 minutes. Open-ended questions were used to explore student's perceptions and views respectively on different aspects of FC. The interviews were started with general

questions such as “How was the FC?, Do you think FC is necessary before beginning of MBBS course?, What was about various activities and discussions during the course or had a stimulating effect on your feelings / emotions?, Which one was the most interesting activity and discussion in FC?, How was the Faculty involved in the session? Which one was the most useful/useless activity and discussion in FC? What is scope of improvement in FC? ”. The moderator asked the questions and participants were encouraged to talk freely about their experiences. The moderator asked for clarification and further elaboration of the student’s responses where ever needed Interviews continued based on the responses of participants and with the help of exploratory questions, such as “Can you elaborate ?,Can you add more?, can you give examples?, or What do you mean?” Subsequent questions were based on initial responses of individuals or analysis of previous interviews.

In FGD, students’ answered and discussions were audio-taped and two note-takers were there for capturing the key points from the discussion, followed by thematic analysis. The process of data gathering continued until data saturation was reached.

Thematic analysis is a useful method for examining the perspectives of different research participants, highlighting similarities and differences, and generating unanticipated insights. (12,13) For thematic content analysis, the present researchers used Braun & Clarke (2006) six-phase guide for identifying, analyzing, organizing, describing, and reporting themes found within a data set (12).In Phase 1, the researchers became familiar with the data by reading, rereading. In Phase 2, codes were generated and documented to find patterns through data reduction by collapsing into labels. Subsequently categories and subcategories were made for efficient analysis. In phase 3, each potential theme was framed and codes were fitted within those themes based on categories and subcategories. In phase 4, themes were reviewed in light of available data. In Phase 5, specifics of each theme were further analyzed to refine in order to generate clear definitions and names for each theme. The final contents of central theme was derived by integrating recommendations mentioned in NMC booklet for FC.

In Phase 6, finally a Write-up was formulated in report form emphasizing which themes makes meaningful contributions in relation to distribution of data. A peer check was done thoroughly to ensure accuracy of representation.

In our research, validity, reliability, transferability, and verifiability for evaluating and validating data in qualitative research were mapped out by using criteria laid by Strobert and Carpenter (2011) (14).

Trustworthiness

At the end, the extracted themes were presented to the participants (member check) and modified accordingly by researcher. The themes were further presented in front of qualified experts (expert check) to collect independent opinions and peer debriefing. All the constituent parts of the research process like method, data and investigator were triangulated to increase the validity.

This study was approved by the Institutional Ethics Committee of Government medical college Ratlam Madhyapradesh India (GMC RATLAM/2019/IEC/Approval/006 Dated 12/09/2019).Before enrolling in the study, all the participants were given sufficient time and explained in detail about the study. Written informed consent was obtained from all the participants. The participants were also assured about the data confidential and drop-out from the study at any time point.

RESULTS

Table 1 provides demographic characteristics of first year MBBS students. Out of 178 participants 96 (53.93%) were male while 82 (46.06%) were female. More than half i.e. 71.79% were residing at urban areas while the rest resided at rural areas. Only 17 (09.55%) of them could understand and speak the local language. Nonetheless all 178 (100%) participants were well versed with Hindi language.

Table 1. Distribution of First year MBBS Students According to Demographic Variables

Demographic variable	Division	No. of Medical Students (n-178)	
		Students	Percent (%)
Sex	Male	96	53.00
	Female	82	47.00
Residence	Rural	50	28.00
	Urban	128	72.00
Local language	known	17	10.00
	Unknown	159	89.00
Hindi language (Speaking, Writing and Reading)	Known	178	100
	Unknown	0	0

Table 2 depicts the feedback of students regarding entire FC on Likert’s scale in terms of ‘strongly agree’, ‘agree’, ‘neutral’, ‘disagree’ and ‘strongly disagree’. Majority of students i.e. 93% gave affirming response regarding introduction of FC in first year MBBS curriculum. More than 96% students were satisfied with various elements of FC. 92.13 % of students felt that FC was an enjoyable experience, 92.68% felt that it helped them acclimatize to new environment and fostered active involvement with peers and faculties. Moreover 91.01% stated that FC helped them realize importance of professionalism and ethics. About 92.68% reported, that FC sessions enhanced their communication skills, 88.19% -92.69% felt that the learning environment boosted their overall confidence and reflective writing skills. 83.70% reported that the sessions helped them manage stress. Sessions on basic life support, Cardio-Pulmonary Resuscitation (CPR), first aid, sports time and stress management, doctor and patient relationship were highly appreciated.

Table 3 shows that among the various sessions, 65% students liked ‘Basic life support, CPR and first aid’ in classroom sessions whereas 70% appreciated ‘Art of living, Yoga classes’ in outside classroom sessions.

Table 2. First year MBBS student’s feedback on FC (FC) program

S.N.	Questions	Total number of students (n) = 178(%)				
		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	FC was an enjoyable new learning experience for me	108 (60.67)	56 (31.46)=92.13%	6 (3.37)	3 (1.68)	5 (2.80)
2	FC made me realize “What the profession of doctor” is and what we should practice when we become doctors.	117 (65.73)	45 (25.28)=91.01	09 (5.05)	3 (1.68)	4 (2.24)
3	FC helped me to accommodate in new environment with my peers and faculty	114 (64.04)	50 (28.08)=92.12	4 (2.24)	3 (1.68)	6 (3.37)
4	FC sessions did enhance my skill to communicate better with my peers and teacher better	99 (55.61)	66 (37.07)=92.68	5 (2.80)	3 (1.68)	5 (2.80)
5	FC helped me for Time management	77 (43.25)	63 (35.39)=78.64	27 (15.16)	6 (3.37)	4 (2.24)
6	FC helped me in short term Stress management	79 (44.38)	70 (39.32)=83.70	18 (10.11)	7 (3.93)	3 (1.68)
7	The learning environment was non- threatening	93 (52.24)	68 (38.20)=90.44	6 (3.37)	1 (0.56)	8 (4.49)
8	The faculties involved in conducting the sessions were knowledgeable and well-trained	112 (62.92)	50 (28.08)=83.00	7 (3.93)	5 (2.80)	4 (2.24)
9	The faculties were very approachable and gave us freedom to ask questions	112 (62.92)	53 (29.77)=92.69	3 (1.68)	3 (1.68)	7 (3.93)
10	FC is necessary before beginning of MBBS course as it provided knowledge and a strong foundation for my medical studies and career as doctor	130 (73.03)	34 (19.10)=92.13	3 (1.68)	3 (1.68)	6 (3.37)
11	FC decreased my anxiety and boosted up my overall confidence as a medical student.	93 (52.24)	64 (35.95)=88.19	7 (3.93)	5 (2.80)	7 (3.93)
12	Reflection helped to understand the core concept of session	96 (53.93)	44 (35.71)=89.64	26 (14.60)	5 (2.80)	7 (3.93)
13	I understand how community health care system functions	85 (47.78)	78 (43.82)=91.60	5 (2.80)	6 (3.37)	4 (2.24)
14	FC Taught me how to interact with the families in community setting	92 (51.68)	62 (34.83)=86.51	11 (6.17)	8 (4.49)	5 (2.80)
15	FC gave me opportunity to learn basic skills which is important for safety of patients as well as physicians.	116 (65.16)	52 (29.21)=94.37	2 (1.12)	1 (0.56)	6 (3.37)
16	Sports and extracurricular activities relieved my fatigue or boost up my energy level.	134 (75.28)	32 (17.97)=93.25	5 (2.80)	3 (1.68)	4 (2.24)

Table 3. Sessions most liked by first year MBBS students in entire FC

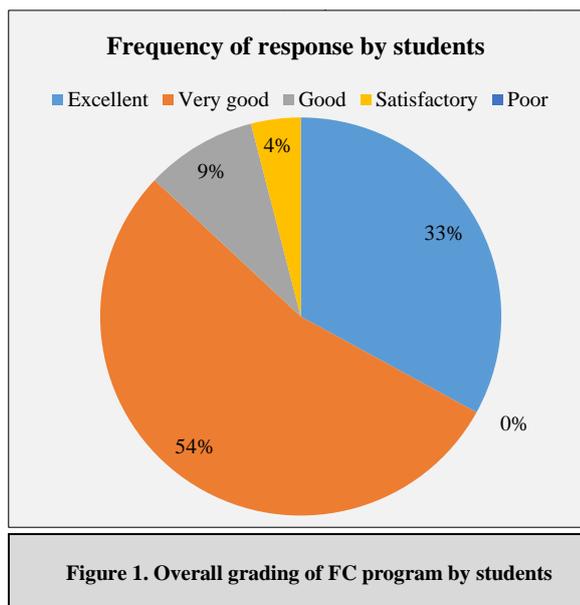
S.no.	Sessions	Frequency of response by students
CLASSROOM SESSIONS		
1	Basic life support, CPR and first aid	65%
2	Time & Stress management	56%
3	Doctor patient relationship	33%
4	Waste management and immunization	32%
5	Professionalism and ethics	28%
6	Role of doctors in society	27%
7	Enhancement of Language Skills	18%
8	Computer skill	10%
OUTSIDE THE CLASSROOM SESSIONS		
1	Art of living ,Yoga classes	70%

Table 3. Continued.

S.no.	Sessions	Frequency of response by students
2	Sports	65%
3	CHC Visit	43%
4	Interaction with new friends	40%
5	Hospital and college visit	36%
6	Discipline	29%

program to be good while none of the participants thought the course was ‘poor.’ So by and large feedback questionnaire survey indicated that students found this course a riveting experience.

Major themes, categories and subcategories were identified in first year MBBS students during Focused Group



views in multiple perspectives under following themes which emerged after FGD.

1. Under Orientation to new environment:

Some students opined that interaction with peers and faculties was rewarding while others noted decrease in peer pressure as expressed in following ways:

“Orientation helped me get an opportunity to interact with my batch mates and faculties”. (P8)

“Now I seem to have better insights on career and responsibilities of a doctor”. (P4)

“We were exposed to a non-threatening environment which led to easy communication with teachers and peers in friendly conditions” (P1)

“I feel comfortable with the study environment after FC and I am able to focus better on studies.” (P5)

In categories complement and alternative medicines students were happy to know alternative therapies in following way:

“We should manage the patient with holistic approach” (P2)

2. Under skills:

Table 4. Major themes, categories and subcategories identified in first year MBBS students during Focused Group Discussions (FGDs)			
S.No.	Themes	Categories	Subcategories
1	Orientation	Transitioning to new environment	<ul style="list-style-type: none"> • Interaction with the peers and faculties under friendly environment • Smooth transition from school to medical college • Prior Introduction of institute, campus and facilities • Overview MBBS curriculum and various career pathways • Sensitizing to different health care system
		Complement and alternative health care system	<ul style="list-style-type: none"> ➤ Different health care systems ➤ Integrated approach for holistic care
2	Skills	Basic and clinical skills	<ul style="list-style-type: none"> • Basic skills for life threatening emergencies • Like Performing BLS (Basic life support), First aid • Universal precaution and Waste management • Documentation of patient care
		Computer and language skill	<ul style="list-style-type: none"> ➤ Basic computer skill ➤ Local and English Language skills
3	Community orientation	Health care system	<ul style="list-style-type: none"> • Sensitization to national health policy • Structure and function of community health center
		Community and Field visit	<ul style="list-style-type: none"> ➤ Learning communication skill in society ➤ Learning system based practice
4	Professional development and Ethics	Professional development	<ul style="list-style-type: none"> • White coat ceremony • Learning Role of doctors in society • Learning Time and stress management • Working in a health care team • Ethics and communication skills
		Ethics	<ul style="list-style-type: none"> ➤ Doctor patient relationship ➤ Altruistic behavior
5	Sports and extracurricular activities	Sports	<ul style="list-style-type: none"> • Indoor games • Outdoor games
		Extracurricular activities	<ul style="list-style-type: none"> ➤ Cultural activities music , singing and dance ➤ Yoga and meditation
6	Suggestion for improving FC	Duration of Programme	<ul style="list-style-type: none"> • Lengthy programme • Customization of duration of language session
		Sessions of programme	<ul style="list-style-type: none"> ➤ All sessions must be interactive ➤ modification of some Content in students point of view

Students indicated that interactive sessions and experiential learning in class motivated them to learn better basic clinical skills. Active learning is a crux of any successful medical education program and lectures without interaction should be discouraged, that was revealed through many facts and points like:

"Best session was BLS session as respective faculties gave their hundred percent"(P8)

"I am satisfied with BLS and first aid session as they provided hand-on training to each and every student"(P1)

"Documentation class was so boring. I have Power point phobia" (P8).

"Some theory lectures were like documentaries" (P5)

"I learnt a lot from FC regarding Basic life support. I especially appreciate the roles and responsibility of doctors in dealing with emergency situations" (P2)

"I am quite confident in giving first aid care to victim effectively"(P7)

"Getting a first-hand experience on BLS, first aid, Cardiopulmonary resuscitation and Community health care visit, I felt that I am becoming a doctor and got vision for my future"(P1)

"I learnt about doctor patient relationship and waste management. It is definitely going to be of use in future clinical practice" (P7)

As far as category language & computer skills are concerned, students participated loudly with strong emotions especially for language with mixed response which are as follows:

"Since I was poor in English, after the course I felt some improvement" (P6).

"I can speak better English now, I feel confident but should be for entire year" (P7).

"I feel importance should be given to learning both the English as well as vernacular language, as students would wish to have an expertise on language of their choice." (P1)

"Language and computer sessions have added to my competency and preparedness learning" (P6)

"I already know the Basic computer skills, should be included more advanced sessions" (P8)

3. Under community & field visit:-

Herein students stated that:

"Community visits helped me enhance my communication skills" (P7)

"My confidence level has boosted" (P5)

"We must know that what doctor think about the patients and the society, what challenges be or she faces in routine medical life" (P2)

"When we go back to our native places, people usually have queries regarding their illness. At those times we can take pride in exhibiting the knowledge acquired in giving us a feeling of a doctor" (P6)

4. Under professionalism development & ethics:

Medical practice is currently at crossroads due to several ills that have crept into the profession, following were statements of students:

"We learnt real role of doctor in society and were able to understand, how to behave with the patient, attendant and staff" (P1)

"I was sensitized on 'how to break a bad news' which is very important in clinical practice" (P2)

"Sessions on communication skills have given me insights on verbal as well as non-verbal communication" (P7)

"Knowledge on communication skill will be helpful in fostering doctor-patient relationship"(P5)

"I learnt many things like short term management of stress and time in medical profession" (P3)

"I have learnt the netiquettes of time management skills" (P3)

5. Under Sports and extracurricular activities

In categories Sports, students responded as follows:-

"I got the opportunity to learn new sports like table tennis and enjoyed so much" (P8)

"I did not expect that we will get the opportunity to play sports in medical college from first day" (P1)

"It was tension relieving and good experience to interact with the batch mates" (P3)

In categories extracurricular activities, students learnt new things how to cope up with stage phobia and team leadership. The comments were as follows:-

"Open mic session gave me confidence and relieve my stage phobia" (P6)

"We got a cultural task as a team and we did our best and learnt many new things" (P2)

"Yoga and art of living class was wonderful experience" (P4)

6. Suggestion for improving FC

In context to problems encountered in categories Duration of Programme and particular sessions of programme, students expressed their concern and raised some points:

"While duration of FC is extremely long, entire program is exhaustive and at times monotonous, it should be minimized to 15 days" (P1).

"We need more time to enhance language skills" (P5).

"Language sessions can be for a year and subsequently individually to make it more beneficial"(P2).

"I feel importance should be given to learning both the English as well as vernacular language, as students would wish to have an expertise on language of their choice" (P1)

"Theory lecture should be converted into interactive sessions or make more interesting by using audio-visual methods or role play" (P4).

"Some faculty did not give their 100% because theory lectures were very monotonous"(P5).

"I suggest we can add some more of basic skills which can make us feel like doctors e.g. measurement of blood pressure, interpretation of radiographic findings, common laboratory reports and prescriptions" (P3).

"There should be more time for field visit and interaction with the families" (P7)

"There should be inclusion of defense course, which is need of the hour" (P6)

Table 5 shows the faculty' feedback involved in FC. A total of 27 faculty members were asked to give feedback on the FC. Break up of 27 faculties were as follows: Professor- 9, Associate professor- 7, Assistant professor- 11. As far as Demographic characteristics of faculties are concerned, 19 (70.37%) were male and 8 (29.63%) were female. There was no separate language, fine art teacher or sport teacher in FC, these responsibilities done by medical faculties only.

DISCUSSION

Prior to introduction of new curriculum of NMC, a few pilot studies have been conducted in past regarding FC for first year MBBS students in a few medical colleges across India. Although the studies were not of one month duration, still they gave a lot of insights on usefulness of sessions on orientation program, computer language training, professionalism etc. Most of the topics selected for this FC were almost similar to the FC designed by Medical Council of India in old and NMC in present status (10,15,16). However to the best of our knowledge, a combination of qualitative & quantitative approach using questionnaire based feedback and FGD methods have not been performed to analyze the perception of students & faculty about FC at post implementation stage of CBME in India.

In present study students gave an overall positive response about FC under all major subthemes as recorded by both methods. This is in line with a study conducted by Mittal *R et al* stating that majority of students graded the Foundation Program as a very good program and none of the students felt that it was poor or unsatisfactory and all the students felt that the foundation program was useful (17). However, a mixed response was obtained from faculty when evaluated by feedback questionnaire. This is in agreement with a study conducted by Shrivastava *et al* wherein the faculties gave mixed reviews on CBME (18).

For the majority of theme based questions in our present questionnaire based study, student's positive response was more than 90 percent. This was further supported by the student's response in focused group discussion on all parameters. These findings support NMC objectives with regards to our first theme "Orientation to FC". Such enthusiastic responses not only justify the rationale for implementation of this course but also high level of preparation at NMC level in structuring the course. This was further geared up by its successful implementation at Institution level in terms of appropriate development of contents and it's delivery. This is in concordance with a study conducted by Manisha and Kar which showed that, more than 70% of students were satisfied with FC to a great extent

Table 5. Faculty' feedback involved in FC

S.No.	Question	Total number of faculties (n) = 27				
		Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
1	FC is a must before beginning of MBBS as it provided Good transition into Medical college.	18 (66.66)	7 (25.92)	0 (0)	0 (0)	2 (7.40)
2	FC was well planned to make it a memorable learning experience for students	6 (22.22)	18 (66.66)	2 (7.40)	0 (0)	1 (3.70)
3	The FC booklet provided by MCI for planning and conduct of the course provided optimum guidance	5 (18.51)	15 (55.55)	6 (22.22)	0 (0)	1 (3.70)
4	The program was well conducted	9 (33.33)	15 (55.55)	1 (3.70)	0 (0)	2 (7.40)
5	It was too idealistic a program	3 (11.11)	6 (22.22)	15 (55.55)	0 (0)	2 (7.40)
6	The students could have learnt the same things in regular classroom also	2 (7.40)	5 (18.51)	13 (48.14)	6 (22.22)	1 (3.70)
7	The duration of the FC was too long.	4 (14.81)	4 (14.81)	11 (40.74)	6 (22.22)	2 (7.40)
8	The topics chosen for the students were appropriate and interesting	8 (29.62)	13 (48.14)	5 (18.51)	1 (3.70)	1 (3.70)
9	I had the capability to conduct the sessions allocated to me	9 (33.33)	15 (55.55)	0 (0)	3 (11.11)	0 (0)
10	I had the resources to conduct the sessions allocated to me	6 (22.22)	14 (51.85)	3 (11.11)	1 (3.70)	3 (11.11)
11	I was able to achieve the objectives identified for the session	8 (29.62)	15 (55.55)	2 (7.40)	0 (0)	2 (7.40)
12	It was too taxing for faculty to manage time for the course	8 (29.62)	6 (22.22)	8 (29.62)	4 (14.81)	1 (3.70)
13	Involvement of external faculty during the program was optimum	5 (18.51)	4 (14.81)	8 (29.62)	4 (14.81)	6 (22.22)

(19). It is important to note that our study appears to have higher response when compared to Manisha and Kar. It could be due to availability of NMC booklet which laid goal & objectives of FC in great details thus helped us to design and implement it more effectively. This was further supported by a study conducted by Shobha Mishra *et al* which emphasized that students enter new environment in medical colleges at around 17 years of age directly from school which can be challenging. Therefore, in Graduate Medical Regulations 2019 of India, attempt has been made to orient medical learners to MBBS program and provide them with requisite knowledge, communication, technical and language skills through a month-long foundation program (20). Study conducted by Mittal R *et al* suggested that there was greater extent of knowledge gain in topics like professional etiquettes and ethics, communication and behavioral skills, community health care, time management and stress management. ¹⁶In another study, by Kerdijk a remarkable improvement in all the learning domains was observed among the undergraduate medical students who were exposed to CBME (21). Also a study conducted by Vyas *et al* showed that early response and feedback regarding the introduction of FC in undergraduate medical curriculum is overwhelming and improves scores in students' perception of knowledge and importance of various modules in FC on Likert's scale, as well as the overall rating for FC indicated that feedback response of newly admitted students was very satisfactory and encouraging (22).

In the present study 78.64% of students gave positive response in context to usefulness of FC in regards to time management, while 85.40% of students reported that reflection component helped them understand the core concepts of session. This is in lines with a study conducted by Srimathi T.A which reported incidence of positive feedback i.e. 88.5 to 98.5% regarding the objectives of the course, contents, presentation, future value of the course in the student's career by a questionnaire issued to the students (23). In the same study by Srimathi T, students also expressed that FC is advantageous especially in the beginning of the First phase of course, as it enables the first year students to acquire the basic knowledge and skills required for all the subsequent phases in MBBS course and later on their medical practice and career (22). In this study, about 92.68% reported that FC sessions enhanced their communication skills, 88.19% -92.69% felt that the learning environment boosted their overall confidence and reflective writing skills. 83.70% reported that the sessions helped them manage stress. This is in line with a study conducted at a western medical school of India regarding perceptions of first MBBS students stating that: 96 (50.8%) students strongly agreed that it led to confidence-building before starting of the formal learning of medical subjects followed by 81 (42.9%) students who strongly agreed that the transition to medical college was smooth due to FC (22).

In this study majority of students i.e. 93% gave positive response for acclimatization to the new environment. They felt that FC did smoothen the transition from school to medical college efficiently. This is in lines with a study conducted by Shobha Mishra *et al* which emphasized that

students enter new environment in medical colleges at around 17 years of age directly from school which can be challenging. Therefore, in Graduate Medical Regulations 2019 of India, attempt has been made to orient medical learners to MBBS program and provide them with requisite knowledge, communication, technical and language skills through a month-long foundation program (20).

Among the various classroom sessions, a doctor patient relationship was liked by majority of the students (33%) whereas other sessions like Professionalism and ethics and Role of doctors in society were in little bit lower side (less than 28%). It is supported by Mittal R *et al* who also suggested that there was greater extent of knowledge gain in topics like professional etiquettes and ethics, communication and behavioral skills, community health care, time management and stress management (17).

Among the various outside class room sessions, Art of living, Yoga classes was liked by majority of the students (70%). This is in alignment of study conducted by Srimathi T where more than 90 % students appreciated the meditation (23).

Medical educators often deliver complex material in a format that does not allow the positive learning engagement recommended by cognitive researchers and theorists. Intentional engagement and active learning pedagogies change the nature of learning, while simultaneously improving knowledge gain and recall abilities (26). Interactive teaching involves interchange of ideas between teachers, students and the lecture content (27).

Medical practice is currently at crossroads due to several ills that have crept into the profession. The malaise may have its genesis traced down right from the time of entrance into medical school due at least in part to inadequacy and lack of contemporariness in current medical curricula.²⁸ Miscommunication at any level from explanation of etiology, disease explanation, need for investigations and treatment options can be a cause of violence against doctors. However, perhaps the most alarming problem is lack of inculcation of empathy, ethics and professionalism rather a steady decline in its level over the course of medical school.

While it is crucial to pay attention to English language in formative years of medical course especially in preclinical and para-clinical, because the text books are in English and many students enter the medical schools with a local background. In later years both English as well as local language can foster a trustful and comprehensible relationship between medical staff and both patients and family members. At the same time importance of Sports have been emphasized by medical students as it helps improve stamina and concentration. Both the importance of language and sports in medical course is needed and also suggested by students for better academic performance (29).

It was surprised to see that majority of students showed aversion towards learning computer skills. When FGD comments were analyzed, it was found that most of the students get exposed to computer training in high schools and using smart phones regularly. The present findings go in accordance with the studies conducted by Suman s *et al* and Dixit R *et al*, where computer skills development sessions were poorly appreciated by the students (30,31).

In context to problems encountered students expressed their concern regarding problems like the length of program, didactic teaching, less hands on experience and language barriers. Students found the entire course very lengthy and requested for a 15 day course or extending the duration longitudinally across higher semester in a customized manner.

Some points showed agreement with a study conducted by Shrivastave *et al* wherein the faculties gave mixed reviews on CBME. They stated that CBME is student-friendly, allows gradation of students on a yearly basis and that it helps in the identification of professional activities, at the same time they opined regarding CBME guidelines implementation for postgraduate students (17). Thus the major themes that emerged from first year MBBS students was finding the entire, favorable, interesting, beneficial, and innovative program to help them acquire competencies of a competent medical doctor as well as a life long learner. The encouraging feedback along with relevant suggestions from students and faculties will be helpful to NMC to conduct FC in a more effective manner in forthcoming years (32).

The strength of the current study is that very few medical colleges in India have taken an initiative to launch CBME, and henceforth the results of the study will prove to be of great help for other medical institutions which are planning to implement CBME in their settings. Further, this is the first study of its kind in which qualitative research methodology has been adopted to explore the perspectives of medical students. Educational interventions are notoriously difficult to evaluate (33). It takes at least a decade to design and implement an entire medical school curriculum. As all the 178 students of the batch 2019 did not attend the whole program, we could not study the perception of every session perfectly. Nevertheless,

many important key aspects of CBME and challenges have been identified with the help of this study.

FC is a positive move in helping undergraduate medical students to acclimatize in a new setting. Since this is the first academic year wherein FC has been implemented; inputs from faculty members and students is important. Collective briefings and feedback from various medical schools in India will help in further improvement of system for achieving the requisite goals. Faculty development programs in regards to sensitization of Foundation Program must continue so that capacity building is ensured to sustain the process of change. Facilitating and nurturing such programs can play a pivotal role in fostering holistic development of students.

Ethical Considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors. IEC Approval No. – GMC RATLAM/2019/IEC/Approval/006, Dated 12/09/2019.

ACKNOWLEDGEMENTS

unit, faculties involved in FC and medical students (Batch 2019) of Medical College where study was done, for their assistance in the study. We would like to pay special regards to medical education unit and faculties involved in advanced course of medical education 8th Batch, NMC Nodal center of medical education, Gujarat, India who gave me the opportunity to conduct such an interesting research work.

Financial support: None

Conflict of Interest: It is declared none.

REFERENCES

1. Medical Council of India. Vision 2015. New Delhi: Medical Council of India; 2011. Available at: http://www.mciindia.org/tools/announcement/MCI_booklet.pdf. (Last accessed on 16.04.2019).
2. Touchie C, Ten Cate O. The promise, perils, problems and progress of competency-based medical education. *Med Educ*. 2016;50:93-100
3. Frank JR, Mungroo R, Ahmad Y, Wang M, De Rossi S, Horsley T. Toward a definition of competency-based education in medicine: A systematic review of published definitions. *Med Teach*. 2010;32:631-7
4. National Medical Commission. Competency Based Undergraduate Curriculum. Available from: <https://www.nmc.org.in/information-desk/for-colleges/ug-curriculum> (Last accessed on 04.04.2021).
5. Harden RM. Outcome-based education: The future is today. *Med Teach*. 2007; 29:625-9.
6. Clark J. Indian medical education system is broken, Reuters investigation finds. *BMJ*. 2015;350:h3324
7. Khilnani AK, Patel J, Khilnani G. Students' feedback on the FC in competency based medical education curriculum. *Int J Res Med Sci*. 2019;7(11):4408.
8. Singh S, Ghosh S, Pandya H. Foundation program for MBBS students at entry level: experience at an Indian Medical School. *South East Asian J Med Edu*. 2007; 1: 33-7.
9. Sharma R, Bakshi H, Kumar P. Competency-based undergraduate curriculum: A critical view. *Indian J Community med*. 2019;44(2):77.
10. National Medical Commission document <https://www.nmc.org.in/wpcontent/uploads/2020/08/FOUNDATION-COURSE-MBBS-17.07.2019.pdf>. (Last accessed on 04.04.2021).
11. Barbour R. Making sense of focus groups. *Med Educ*. 2005, 39(7): 742-50.
12. Braun V, Clarke V. Using thematic analysis in psychology. *Qual Res Psych*. 2006; 3: 77- 101.
13. King, N. Using templates in the thematic analysis of text. In Cassell, C., Symon, G. (Eds.), *Essential guide to qualitative methods in organizational research*. London, UK: Sage;2004.p. 257-270
14. Nabeiei P, Amini M, Ghanavati Sh, Marhamati S. Research priorities in medical education at Shiraz University of Medical Sciences: categories and subcategories in the Iranian context. *JAMP*. 2016; 4(1):26-32.
15. Singh S, Ghosh S, Pandya H. Foundation programme for MBBS students at entry level: experience at an Indian Medical School. *South East Asian J Med Edu* 2007; 1: 33-7.
16. MCI Document: FC for the Undergraduate Medical Education Program (2019) Medical Council of India, Pocket-14, Sector-8, Dwarka, New Delhi 110077. Available at: <https://www.mciindia.org> - (Accessed: 02/02/2020).

17. Mittal R, Mahajan R, Mittal N. Foundation programme: A student's perspective. *Int J App Basic Med Res.* 2013;3(1):52.
18. 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 Community Health.* 2019;7(1):e000043.
19. Mishra P, Kar Manisha. Perception of Students on FC conducted for First year MBBS students at AIIMS Bhubaneswar. *Indian J Community Fam Med.* 2017;3(2):16-9
20. Misra S, Fichadiya N, Kariya V. Implementation of Foundation Program under 'Graduate Medical Regulations 2019' for first professional MBBS students at a Medical College located in western India-A transformative learning experience. *MedEd Publish.* 2020;9(1):64.
21. Kerdijk W, Snoek JW, van Hell EA, Cohen-Schotanus J. The effect of implementing undergraduate competency-based medical education on students' knowledge acquisition, clinical performance and perceived preparedness for practice: a comparative study. *BMC Med Educ.* 2013;13:76
22. Vyas S, Joshi U, Sheth J. Perception of first MBBS students from a medical college in Ahmedabad, Gujarat about one month's FC during the year 2019. *Natl J Integr Res Med.* 2020; 11(1): 72-8
23. Srimathi T. A study on students' feedback on the FC in first year M.B.B.S curriculum. *Int J Med Res Health Sci.* 2014;3(3):575-9.
24. Rege N. Towards competency-based learning in medical education: Building evidence in India. *J Postgrad Med* 2020; 66(1):9.
25. Frank JR, Linda S, Snell LS, Cate OT, Carraccio C, Swing SR, et al. Competency-based medical education: Theory to practice. *Med Teach.* 2010;32:638-45
26. Graffam B. Active learning in medical education: strategies for beginning implementation. *Med Teach.* 2007; 29(1):38-42.
27. Kaur D, Singh J, Seema MA, Kaur G. Role of interactive teaching in medical education. *Int J Basic Appl Med Sci.* 2011;1(1):54-60.
28. Mishra S. Violence against doctors: the class wars. *Indian Heart J.* 2015; 67(4): 289-92.
29. Joshi AS, Ganjiwale JD, Varma J, Singh P, Modi JN, Singh T. Qualitative assessment of learning strategies among medical students using focus group discussions and in-depth interviews. *IntJ App Basic Med Res* 2017;7Suppl 1:S33.
30. Suman S, Sarmishtha G, Himanshu P. FC for MBBS students at entry level: experience at an Indian medical school. *South East Asian J of Med Edu.* 2007;1(1):33-7.
31. Dixit R., Joshi K.P., Suhasini P, Jamadar D., Students' perception of FC - a new experience in MBBS curriculum in India. *Int.J.Med.Sci.Educ.* 2019;6(3):1-7
32. Hawkins RE, Welcher CM, Holmboe ES, Kirk LM, Norcini JJ, Simons KB, Skochelak SE. Implementation of competency-based medical education: are we addressing the concerns and challenges?. *Med Educ* 2015; 49(11):1086-102.
33. Goldie J. AMEE education guide no. 29: evaluating educational programmes. *Med Teach.* 2006; 28(3):210-24.