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RESEARCH ARTICLE
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STUDENTS PERCEPTION ON IMPACT OF FOUNDATION COURSE IN MEDICAL SCIENCES

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ABSTRACT

Introduction: The medical education program apart from imparting knowledge has prepared the medical graduate to appraise oneself with the evolving new health care needs of the patient population. Medical Council of India (MCI) has introduced Foundation Course (FC) in the undergraduate medical -curriculum from the admission year 2019 in view of GMER (Graduate Medical Education Regulations) 2019. The students admitted for MBBS (Bachelor of Medicine and Bachelor of Surgery) course during the year 2019 were the first batch exposed to such kind of program. Medical students come from varied backgrounds and require a bridge for transition from school to a professional course.
Aims and Objectives- To examine how first-phase medical students perceive the influence of their foundation course. To assess how the students perceived the course content of the foundation course.
Methodology: A pre-validated ten (10) self-prepared questionnaires was used for data collection. The students were asked to attempt the questionnaire before starting and again after the completion of the Foundation Course. Questionnaires was circulated among the students and they were asked to tick (Yes/No) and rate their learning and overall perception against each item in the questionnaire. At the end of the Foundation Course, a cross-sectional study was carried out to assess students perception on the course.
Results: Maximum students agreed that it led to confidence-building before start of the formal learning of medical subjects followed by students who strongly agreed that the transition to medical college was smooth due to FC.
Conclusions: The foundation course will help students understand the basics of medical profession as well as ethics, communication and focus on competencies and soft skills.

Key Words: Foundation Course, medical education, Cross-sectional study, Students, Questionnaires

INTRODUCTION

Foundation Course (FC) is introduced as a forerunner of competency – based undergraduate medical curriculum. Sensitization of the fresh medical (MBBS) students through one – month long foundation course with a view to adapt themselves to the new professional career right from the beginning of the course is the main objective of the foundation course. Therefore, this foundation course would also provide a sound foundation for learning in the MBBS course and later in their professional career [1,2]. Conducting prior orientation courses before commencement of the actual formal course oriented teaching and learning process goes a long way in healing the students adjust better to new and often daunting environment in medical schools [3]. Colleges and universities worldwide develop and implement students' orientation programs to acclimatize them to the campus environment, familiarize them with the teaching programmes helping them to adapt to the academic challenges, as they move from higher secondary schools into undergraduate programs [4]. It is important for every medical college to train these students in different aspects like professionalism, learning methodology, computer skills before the start of MBBS course. The students also require training in interpersonal relationship which will help them to maintain a positive working culture with the team at hospital or Community health centers. All these training should be vigorous enough and focused [5,6]. In Graduate Medical Education Research (GMER) 2019, Foundation Course (FC) of one month duration and of total 175 hours has been introduced to orient and sensitize students through orientation programme, skill module, community visits, professional development including ethics, enhancement of learning of languages and computer skills for their smooth transition to medical college [1,2]. The FC helps the students to get an overview of the MBBS curriculum and learn medicine effectively to achieve the required attributes.

The Foundation course mainly focuses on the following purposes:
Introduce and orient the students to every facet of the medical college setting.

- Give them the fundamental knowledge and abilities needed to provide patient care while also improving their computer, learning, communication, and language skills.
- Give students the chance to interact with teachers and peers and make them more aware of different teaching and learning approaches.

OBJECTIVES

- To examine how first-phase medical students perceive the influence of their foundation course.
- To assess how the students perceived the course content of the foundation course.

METHODOLODY

Keeping NMC (erstwhile MCI) guidelines as basic framework, a one month long Foundation Course for the 100 (hundred) newly admitted fresh students of MBBS was conducted. As per the new guidelines and proposed Graduate Medical Education Regulations (GMER) by MCI, Foundation Course was the first step before the beginning of their actual medical academic course. A one month course was designed in consultation with Medical Education Unit (MEU) faculties and senior faculties from all departments.

The course was designed under five different modules as per direction of MCI i. e. Orientation Module (Module-1), Skill Module (Module-2), Module on Community Orientation and Field visits (Module-3), Module on Professional Development including Ethics (Module-4) and a Module on Communication and Language skills (Module-5).

Areas covered under these modules were basics and had relation to various roles of Indian Medical Graduate (IMG). Topics like orientation of infrastructure and services, Basic Life Support (BLS) and First Aid techniques to immunization and biomedical waste management, field visits to community field practice areas and understanding of healthcare delivery system in India, personal and professional development including stress management, extracurricular activities and sports, ethics, reflection, proficiency in written and spoken languages etc. were included. A pre-validated ten (10) self-prepared questionnaire was used for data collection. The response of students to the questions

was reported. Before the beginning of the one month course and once more after completion of the Course, the students were asked to complete the questionnaire. Students were given questionnaires to complete, and they were asked to mark each item with a yes or no to indicate how they felt about their overall perception and level of learning. At the end of the Foundation Course, a cross-sectional study was carried out to assess students' perception on the course which falls under the first stage of Kirkpatrick model of evaluation

Approval from the Institutional Ethical Committee was obtained and informed consent was also obtained in the beginning and students' responses were kept anonymous throughout all stages of the study.

Following discussions with institutional officials, the study was carried out on one hundred (100) students in the anatomy department at Shija Academy of Health Sciences (SAHS) with the aim of improving the implementation of the Foundation Course (FC) for upcoming undergraduate batches. The students were explained about the purpose of study in the common class and only willing students were only included in the study. MS Excel was used to enter the data from the filled-in form, and the chi square test was applied to analyse the results involving statistical qualitative comparison. A picture showing collection of data from students is shown in figure 1.

Figure 1- Collection of Questionnaires, 2023-24(B)

OBSERVATION AND RESULTS

The FC encompassed the learning of five modules, which included orientation, skill, community health, professional development with ethics, and improvement of language/computer skills modules as recommended by MCI. The FC encompassed the learning of five modules, which included orientation, skill, community health, professional development with ethics, and improvement of language/computer skills modules as recommended by MCI. Various competencies of each module were addressed in FC course program. Perceptions of the students towards these competencies were largely positive. The student response to the questions before and after foundation course is shown in Table 1 and 2.

Table 1: Pre Foundation Course (FC) Questionnaire

Question	Students Response		Total
	Yes	No	
Benefits of FC	75	25	100
Knowledge of Basic Life Support (BLS)	73	27	100
Knowledge of Bio Medical Waste (BMW) and Safety Management (SM)	82	18	100
Knowledge of Community Health Centre (CHC) and Primary Health Centre (PHC)	86	14	100
Knowledge of Immunization	56	44	100
Knowledge of Local Language	92	8	100
Knowledge of improper disposal of BMW	95	5	100
Knowledge of Symbol of Medical Doctor	89	11	100
Knowledge of Computer Handling	70	30	100
Non Verbal Interaction with Patients	44	56	100

Table 2: Post Foundation Course (FC) Questionnaire

Question	Students Response		Total
	Yes	No	
Benefits of FC	95	05	100
Knowledge of Basic Life Support (BLS)	83	17	100
Knowledge of Bio Medical Waste (BMW) and Safety Management (SM)	96	04	100
Knowledge of Community Health Centre (CHC) and Primary Health Centre (PHC)	93	07	100
Knowledge of Immunization	69	31	100
Knowledge of Local Language	95	05	100
Knowledge of improper disposal of BMW	98	02	100
Knowledge of Symbol of Medical Doctor	90	10	100
Knowledge of Computer Handling	80	20	100
Non Verbal Interaction with Patients	55	45	100

Table 1 and Table 2 shows the number of students responded along with the 10 (Ten) validated self-prepared Pre Foundation Course Questionnaires and Post Foundation Course Questionnaires.

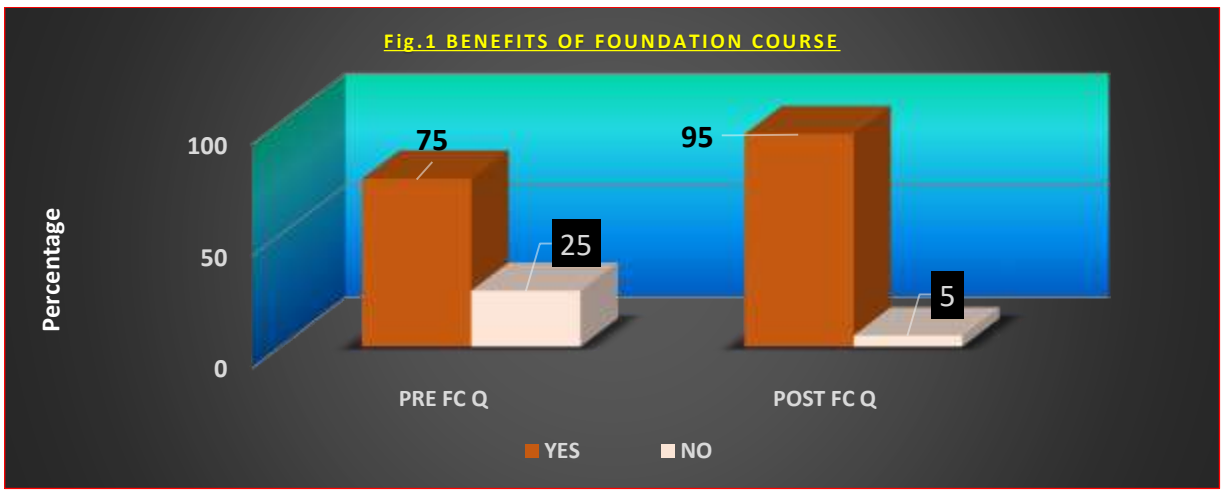
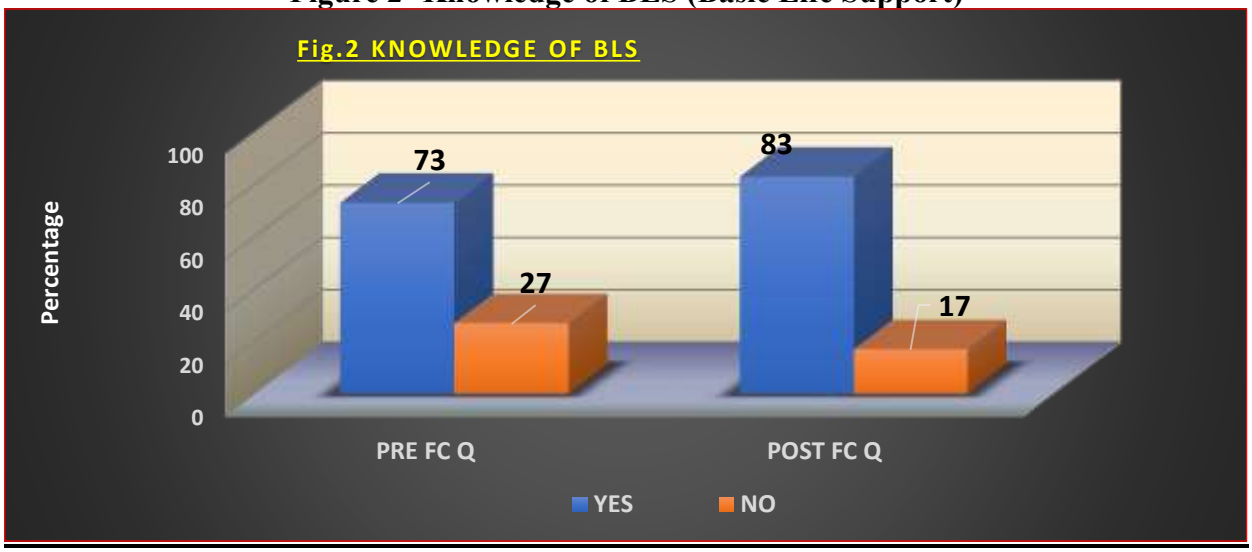
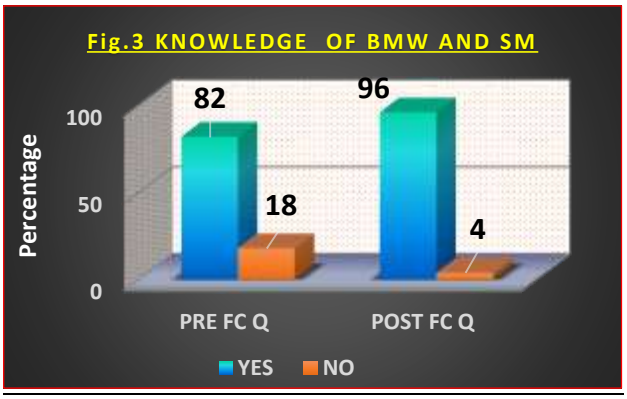


Figure no. 1 shows The benefits of foundation course (FC) and it has observed that percentages of response has experienced an increase from the pre-questionnaire feedback (75%, 25%) to post-questionnaire feedback i,e (95%, 05%). Therefore, showing that the FC has proved to be beneficial for the first year MBBS students as also revealed by the value of chi square which shows statistically significant difference (χ^2 =14.157*, df=1,P value=0.000). The benefit of FC is shown in figure 1.

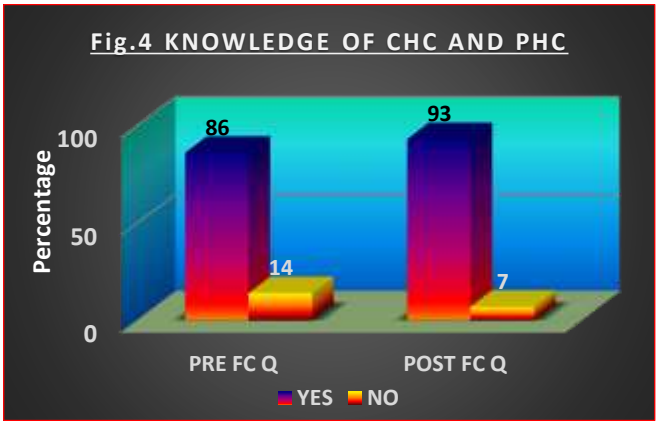
Figure no. 2 shows the students response on the knowledge of Basic Life Support and it is observed that the percentage of students feedback have been increased from the Pre-FC feedback (73%, 27%) to Post-FC feedback (83%, 17%). Therefore, showing that the students have gained the idea of Basic Life Support during the FC even though no significant difference is observed between pre and post FC (χ^2=2.914, df=1, P value=0.087).

Figure 2- Knowledge of BLS (Basic Life Support)





As revealed in Figure No.3 it is clearly observed that the knowledge of Biomedical Waste and Safety Management has increased in response by the students from pre-questionnaires (82%, 18%) to post-questionnaires (96%, 04%). Therefore, the knowledge BMW and SM have increased amongst the students after the FC, as also revealed by the value of chi square which shows statistically significant difference (χ^2=8.631*,df=1, P value=0.001)



With regards to Figure no. 4, again according to the responses of the students there is an increased in the knowledge of Community Health Centre and Primary Health Centre from pre-Q FC (86%, 14%) to post-Q FC (93%, 07%). Therefore, the students are now be able to differentiate between CHC and PHC after the knowledge gained during the FC. Though there seems to be difference before and after the FC no statistically significant difference is displayed as shown by the Chi square value (χ^2=2.607, df=1,P value=0.106)

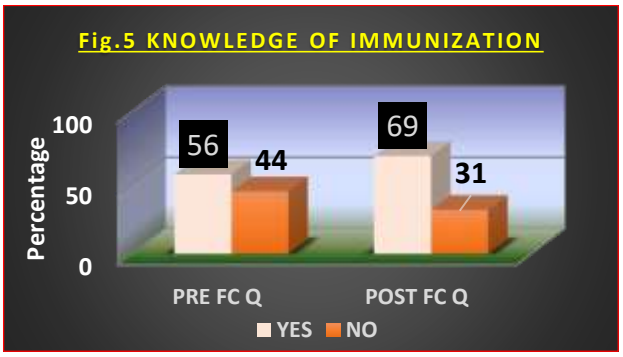


Figure no. 5 shows that the number of students who have gained the knowledge of immunization which is required in the health care professionals has increased from pre – q FC (56%, 44%) to post – q FC (69%, 31%). Though there is an increase in the knowledge of immunization, yet when statistically examine there is no significant difference (χ^2=3.605, df=1, P value=0.057)

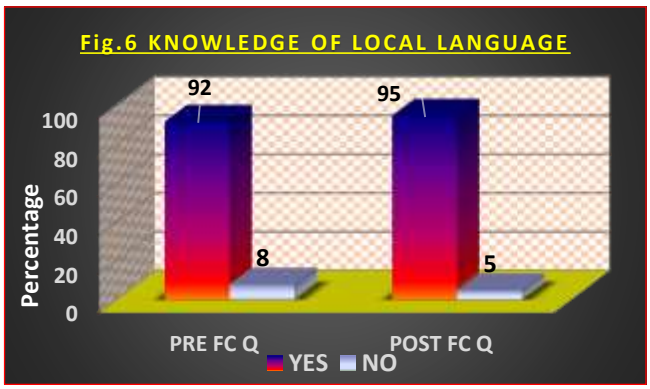


Figure no. 6 displays the frequency percent distribution of learning local language prior to foundation course and post foundation course. It is observed that before FC course as many 92% of the students knew the local language of the people where the college is located during the FC. After the FC course it has increased by 3% resulting to 95%. However, when statistically compared it is observed that there is no significant difference (χ^2=0.74, df=1, P value=0.389)

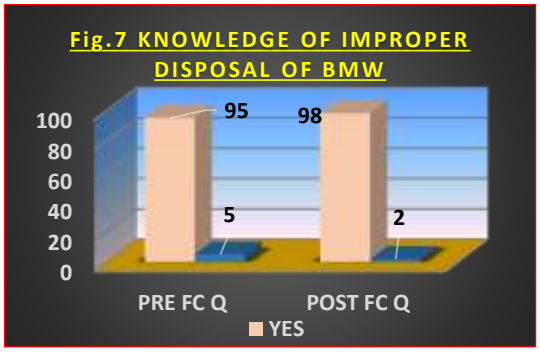
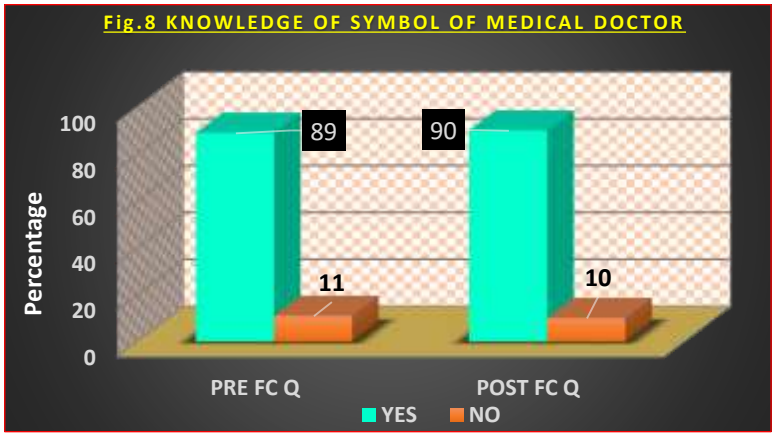
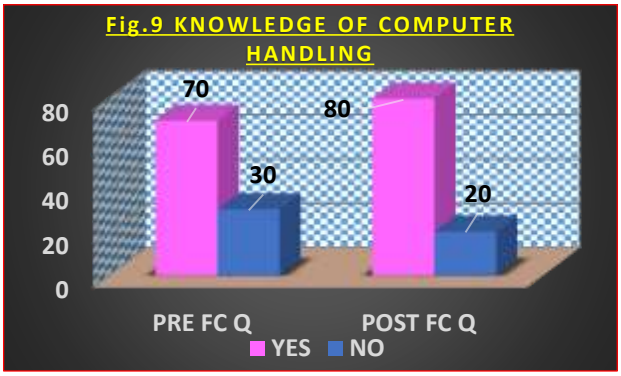


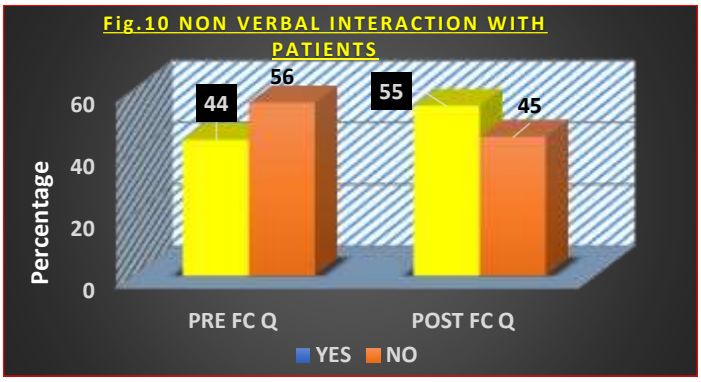
Figure no. 7 reveals that according to the response from the students the knowledge about improper disposal of BMW has been increased from pre-q feedback (95%, 05%) to post-q feedback (98%, 02%) after the FC and they now know about hazards of improper disposal of Biomedical Waste. However, when statistically compared it is observed that there is no significant difference (χ^2=0.592,df=1,P value=0.441)



As evident from Figure no.8 it is clearly observed 89% of MBBS students are aware of the symbol of medical doctor and 11 % unaware before the commencement of the foundation course. After the foundation course there is increase of only 1% of the student becoming aware of the symbol of medical doctor. Though majority of them are aware of the symbol there are as many as 10% students who are unaware of the symbol even after the completion of FC. When statistically compared it is observed that there is no significant difference (χ^2=0.053,df=1, P value=0.817)



As can be seen in this Figure no. 9, it is observed that majority of the students (70%) had the knowledge of handling computer before the commencement of FC. After the completion of the course it has increased by 10%. It is mainly because of the FC. Yet there are as many as 20% students who still lacks the knowledge of handling computer. When statistically compared it is observed that there is no significant difference (χ^2=2.667, df=1, P value=0.102)



In this Figure no. 10, it shows that there is an increase in the percentage from pre-q FC (44%, 56%) and post-q FC (55%, 45%). It is observed from the feedback of the students that majority of the students feels non-verbal is required while interacting with patients. However, when statistically compared it is observed that there is no significant difference (χ^2=2.42, df=1, P value=0.119).

Table 3. Statistical Comparison of parameters pre and post foundation course

Questions		Student respondent		Total	Chi square value
		Yes	No		
Benefits of FC	Pre	75	25	100	χ^2 =14.157* df=1 P value=0.000
	Post	95	05	100	
Knowledge of Basic Life Support (BLS)	Pre	73	27	100	χ^2=2.914 df=1 P value=0.087
	Post	83	17	100	
Knowledge of BMW and SM	Pre	82	18	100	χ^2=8.631* df=1 P value=0.001
	Post	96	04	100	
Knowledge of CHC and PHC	Pre	86	14	100	χ^2=2.607 df=1 P value=0.106
	Post	93	07	100	
Knowledge of Immunization	Pre	56	44	100	χ^2=3.605 df=1 P value=0.057
	Post	69	31	100	
Knowledge of Local Language	Pre	92	08	100	χ^2=0.74 df=1 P value=0.389
	Post	95	05	100	
Knowledge of improper disposal BMW	Pre	95	05	100	χ^2=0.592 df=1 P value=0.441
	Post	98	02	100	
Knowledge of Symbol of Medical Doctor	Pre	89	11	100	χ^2=0.053 df=1 P value=0.817
	Post	90	10	100	
Knowledge of Computer Handling	Pre	70	30	100	χ^2=2.667 df=1 P value=0.102
	Post	80	20	100	
Non Verbal Interaction with Patients	Pre	44	56	100	χ^2=2.42 df=1 P value=0.119
	Post	55	45	100	

DISCUSSION

Although there is currently a dearth of research literature on the introduction of the Foundation Course (FC) in the MBBS new curriculum at the start of the first MBBS and the implementation of the Graduate Medical Education Regulations (GMER) 2019, the current study will provide insights into how students perceived and learned during this time. Since the Foundation Course was just recently introduced to the MBBS curriculum, there aren't many references to compare the observations with. However, a comparison has been made using a small number of studies that were conducted after the course was added to the curriculum but had some components that were similar to the Foundation Course and a small number of new studies that were conducted after the course was added to the curriculum.

There are five learning modules during foundation course and the perceived learning of these modules by the students was assessed at the beginning and at the end of the foundation course. In the present study, all the competencies were assessed on self-prepared questionnaires. The score for orientation module as assessed on self-prepared questionnaire was 75% for Yes & 25% for No (Pre-Q) and 95% for Yes & 05% for No (Post-Q). With the exception of a few sessions, more than 70% of students in a different study by Mishra Priyadarshini and Manisha Kar were found to be satisfied to a great extent [4]. This was based on an examination of data gathered from the feedback questionnaire regarding the perception of students on foundation course. In another study by Dixit R Et. al. the mean scores of the knowledge and importance of the topics included in orientation module were 1.18±0.400 and 1.19±0.396 respectively before the foundation course but afterwards the scores increased to 3.3±1.11 and 3.8±0.951 respectively [5]. The score for skill module were 73% & 27% (pre-q) and 83% and 17% (post-q) in the present study. Higher score for skill module in the present study may be due to demonstration by use of mannequins and teaching in the small groups involving hands-on training on mannequins. The score for community orientation and field visits was 86% and 14% (pre-q) and 93% and 07% (post-q). The scores for various components of professional development including ethics were 56% & 44% (pre-q) and 90% & 10% (post-q). The score in regards to communication and language skills was 92% & 08% (pre-q) & 52% & 48% (post-q). In a study conducted in Bhubaneswar, the percentage of students who felt they were less involved in sessions involving skills, time management, computer knowledge, and using online resources for learning was 50%, whereas sessions involving the history of medicine, the national health scenario, ethics, and professionalism had 30–40% of the students feeling this way [4]. In a study by Mittal Rakesh Et. al, out of the 100 participants, 67% of the participants labelled the foundation program a very good exercise**.** As per the students' perspective, effective learning was aided by well-chosen themes that addressed significant features related to the clinical phases, well-presented materials, knowledgeable and engaging professors, and interactive approaches [6]. The present study also reveals similar findings where 66.7% students felt that FC was the ideal program for the new students. Still this finding of the present study indicates that there is a scope for refining the program further by having more and more components of interactive and small group sessions. In the present study the students felt that due to FC they had smooth transition to new college and the program has built their confidence before start of the formal teaching of medical subjects. They also felt that their attitude towards the problems faced by the patients has also changed. In a study by Khilani Ajeet Kumar Et. al, 82.4% and 89.2% students felt that FC helped them in adapting to the new course and environment respectively [7]. The FC will now be regularly conducted at the beginning of MBBS before the start of the formal learning of medical subjects and the findings of the present study identified students' perception as highly welcoming for this new program as a part of GMER 2019.

CONCLUSION

An advantageous addition to India's undergraduate medical curriculum is the Foundation Course. It aids students in developing into more proficient scholars and professionals when it comes to contemporary medicine. It orients them for lifetime learning, helps them understand the value of gender sensitization, communication, ethics, and general curiosity.

Students perceived foundation course as an excellent opportunity to acquire basic knowledge, attitude, and skills required for subsequent phases in MBBS course and the transition from school to medical college environment is the time when many students experience hardship to cope with.
This foundation course enhanced their orientation to the curriculum and campus, boosted confidence to cope up with the challenging syllabus, helped them develop time and stress management skills, and also sensitized them to achieve the highest standards of morale required to ensure ethical practice.
All the five modules of Foundation Course were understood well by the students. Though the time was allotted for sports and extra-curricular activities as per guidelines of the Foundation Course assessment of same was not carried in the present study.
The students understood that leadership quality, time management, stress management, team work, good communication skills and other skills etc. are essential components of becoming an efficient Indian Medical Graduate (IMG).
Even though the Foundation Course was only implemented for the first year batch of students, there is still room for further development in order to prepare for the next batch of students.
This foundation course was successful in creating an impact on these young minds as reflected in Student's feedback and reflections revealed. In the student's words, the foundation course has now become an integral part of training of undergraduate students.
Overall, the students had much appreciation for the Foundation Course program and most findings pointed to its key importance in the medical field.
The findings of the present study show that students acknowledged the necessity of the foundation course. We may learn more about the students' prior knowledge and how to better customize the foundation course for them by looking through the surveys.

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