

Original Research Article

Student perceptions of small and large group discussions as active learning strategies in undergraduate medical education: a cross-sectional study from Gwalior (M.P)

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ABSTRACT

Background: Competency-based medical education focuses on the active learning interventions that improve communication, critical thinking, and the engagement of the learner. In undergraduate medical education, SGD and LGD are common interactive methods of teaching; even so, little evidence has been found about the perceptions of students regarding their efficacy in the framework of Indian CBME. To assess students' perceptions regarding the content, delivery, and effectiveness of SGD and LGD, to evaluate their perceived impact on communication and analytical skills, and to identify areas for improvement.

Methods: The study was a cross-sectional feedback study carried out among undergraduate MBBS students (Batch 2021) in the Department of Community Medicine in a tertiary care medical college in Gajra Raja Medical College Gwalior (M.P). A pre-established, pre-tested feedback questionnaire will be administered after SGD and LGD sessions that will take place in July 2024. The descriptive statistics was used to analyze data of 162 complete responses and reported in terms of frequencies and percentages.

Results: Most of the respondents felt that the group meetings were suitable, informative, and interesting. The majority of students indicated that they had developed better skills in walking into groups, relating with peers, building relationships, and critical thinking.

Conclusion: Small and large group discussions were considered as good active learning competencies that increased cognitive and interpersonal abilities of undergraduate medical students.

Keywords: Active learning, Group discussion, Medical education, Student perception, Competency-based medical

INTRODUCTION

The medical education paradigm shift has included the traditional teacher-centered method of medical education giving way to the learner-centered one that focuses on active participation, critical thinking, and communication as well as lifelong learning. The modern curriculum is more inclined to utilize interactive teaching-learning approaches that enhance the stimulation of the learner and the deeper knowledge of complex concepts, especially

undergraduate medical education. There is some evidence that active learning techniques lead to higher knowledge retention, satisfaction among students, and acquisition of professional skills as compared to didactic lectures, all by themselves.¹ Competency-based medical education (CBME), being applied in India, by the National Medical Commission, suits up with this international education reform in terms of training based on outcomes, skills integration, and learning responsibility of students. In the CBME model, small and large group learning techniques

are highly recommended to impart communication, team effort and critical thinking among medical students.² Active approaches in group learning are particularly applicable in such fields like community medicine where team work and the use of principles in promoting public health are vital. Small group discussions (SGDs) are more organized types of learning that usually engage a small number of students and permit more interaction, group learning, and feedbacks. On the other hand, when structured as interactive sessions instead of passive lectures, SGDs are found to promote student motivation, communication skills and reflective learning in medical training.⁴ On the other hand, large group discussions (LGDs), when organized to be interactive instead of passive lectures, facilitate group participation, experiences in shared learning, and disciplines about different perspectives. It has been proven that effective interactions between large groups in the teaching process through adequate facilitation may greatly enhance learner attention and learning of concepts.⁵

Feedback in medical teaching is a crucial aspect of assurance in quality care and a tool that is needed to examine the effectiveness of teaching-learning methods. The interpretation of learning materials provides interesting feedback on the positive and negative aspects of educational interventions and may facilitate curriculum reform.⁶ Ongoing collection of student feedback is thus one of the elements of the continuous improvement and corresponds to the international conventions of accreditation of medical education.⁷ In spite of the fact that the effectiveness of the interactive teaching technique was examined in a number of studies, the empirical material regarding the perceptions of the undergraduate students towards small and large group discussions in terms of the CBME framework is rather scarce. Focusing on how students consider these learning strategies is critical in maximizing the instructional designs and the communities through the confirmation of the correspondence in the competency-based purposes. The given study was conducted in order to assess the perception of the students regarding SGD and LGD lessons delivered by a medical college in the Department of Community Medicine in Central India and determine areas of improvement concerning the implementation of group-based learning sessions.

METHODS

Study design

A cross-sectional, descriptive, feedback-based study was conducted to assess students' perceptions of SGD and LGD sessions.

Study setting

The study was carried out in the Department of Community Medicine at a tertiary care teaching Gajra Raja medical college in Gwalior (M.P.).

Study participants

The study population comprised undergraduate MBBS students (Batch 2021) who attended both SGD and LGD sessions conducted as part of the regular teaching schedule in July 2024.

Study periods

The study was conducted during July 2024 in the Department of Community Medicine, Gajra Raja Medical College, Gwalior (M.P.). The educational intervention comprised a SGD conducted on 08 July 2024 and a LGD conducted on 09 July 2024. Data collection was carried out immediately after completion of the LGD session through a structured feedback questionnaire administered to participating students

Sample size and sampling technique

The sampling used was universal i.e. all the students who are present during SGD and LGD sessions and could give feedback were called upon. A total of 162 students out of the eligible students were able to fill out the entire feedback forms and were incorporated in the final analysis. Universal sampling has been regarded as suitable with regard to educational feedback studies that are carried out in specific scholastic cohorts.

Inclusion criteria

Undergraduate MBBS students of Batch 2021 enrolled at Gajra Raja Medical College, Gwalior. Students who attended both the SGD and large group discussion LGD sessions conducted during July 2024.

Students who voluntarily participated and provided informed consent. Students who submitted completely filled feedback questionnaires.

Exclusion criteria

Students absent from either SGD or LGD session. Students unwilling to participate. Students who submitted incomplete or partially completed questionnaires. Responses with missing information affecting data analysis.

Description of the educational intervention

The intervention was an educational intervention, which had a SGD, on 08 July 2024, and a LGD, on 09 July 2024. Students were divided into small groups where separate groups were led by the members of the faculty and postgraduate residents.

The LGD session was conducted through interactive discussions, peer discussions and clarification of ideas. I was keen in the active participation, time management, and the use of the learned concepts in both sessions.

Data collection tool

The structured feedback questionnaire was used to gather the data to give the most accurate impression of how the students viewed various areas of perception, such as relevance of the content, the participation level, their skill in communication, their analytic thinking, interacting with peers, faculty support, and their general satisfaction. The questionnaire was constructed on the established instruments of medical education research available in the past and adjusted to the context of the local teaching.⁹ The subject experts on medical education reviewed the tool to achieve content validity and clarity. A pilot test was done to a limited sample of students who were not part of the final analysis to make sure that it would be comprehensible and practical.

The structured feedback questionnaire was developed based on previously published survey instruments in health professions education and adapted to the local teaching context.^{8,9} The questionnaire was reviewed by subject experts for content validity and clarity before pilot testing.

Data collection procedure

The feedbacks were given right after the finishing of the LGD session. All the participation was voluntary and to encourage truthful respondents anonymity was also considered. No personal data were gathered.

Statistical analysis

Data were entered into Microsoft Excel and analyzed using descriptive statistics. Responses obtained using Likert-scale items were summarized as frequencies and percentages, which is the recommended approach for descriptive analysis of Likert-type data.¹⁰ No inferential statistical tests were performed because the primary objective was to describe students' perceptions.

Ethical considerations

Ethical approval/departmental permission was obtained before commencement of the study. Participation was voluntary and informed verbal consent was obtained from all participants. Confidentiality and anonymity were maintained throughout the study in accordance with ethical principles for medical education research.¹¹

RESULTS

A total of 162 undergraduate medical students participated in the study and submitted complete feedback responses. Table 1 presents the socio-demographic profile of the study participants. Most participants were aged 22–25 years (65.4%), while male students constituted 63.0% of the study population. Table 2 shows students' perceptions regarding the relevance, interest, and engagement of the group discussion sessions. A large majority of students considered the topics appropriate (98.2%), received timely information regarding the sessions (95.7%), and found the sessions interesting (96.9%) and engaging (83.3%). Most respondents also reported adequate depth of topic coverage (85.8%).

Table 3 depicts the perceived impact of SGD and LGD on learning and skill development. Most students reported improvement in overall knowledge (98.8%), public speaking and communication skills (86.4%), reasoning and analytical abilities (83.3%), peer interaction (80.3%), and rapport building (87.0%). Table 4 summarizes students' perceptions regarding facilitation, learning environment, and preferences. Nearly all participants appreciated active faculty and postgraduate support (98.1%), while all students acknowledged the emphasis on time management during the sessions (100%). Satisfaction with electronic teaching aids was reported by 91.4% of respondents. Additionally, 65.4% preferred presentations to be conducted on the day following the group discussions.

Table 1: Socio-demographic profile of participants (n=162).

Variables	Category	Frequency	%
Age (in years)	18–21	53	32.7
	22–25	106	65.4
	>25	3	1.9
Gender	Male	102	63
	Female	60	37

Table 2: Student perception regarding relevance, interest and engagement.

Parameters	Positive response N (%)
Topic appropriateness	159 (98.2)
Timely information about sessions	155 (95.7)
Sessions found interesting	157 (96.9)
Sessions found engaging	135 (83.3)
Adequate depth of topic coverage	139 (85.8)

Table 3: Perceived impact of group discussions on learning and skill development.

Parameters	Positive response N (%)
Improvement in overall knowledge	160 (98.8)
Improvement in public speaking and communication	140 (86.4)
Enhancement of reasoning and analytical skills	135 (83.3)
Opportunity for interaction and exchange of ideas	130 (80.3)
Effective rapport building	141 (87.0)

Table 4: Facilitation, learning environment and student preferences.

Parameters	Response N (%)
Active faculty and postgraduate support	159 (98.1)
Emphasis on time management	162 (100.0)
Satisfaction with electronic teaching aids	148 (91.4)
Self-reflection after peer presentations	59 (36.4)
Preference for presentations on the next day	106 (65.4)

DISCUSSION

The current research evaluated the perceptions of the undergraduate medical students towards the SGD and LGD as active learning strategies in a competency-based curriculum. The results prove that the students are very satisfied with numerous areas, and these areas are engagement, communication skills, analytical reasoning, and overall learning experience. In the present study 98.15 percent of the students reported to be appropriate and relevant with the discussion topics.

Burgess et al also provided similar results with 94 percent of medical students in multi-institutional study among health profession students identifying small group discussions as useful in achieving their learning goals.⁴ It is also possible that the proportion here was a bit higher because groups were arranged based on topics and students preinformed.

On the issue of student engagement, 83.30% respondents in the current study perceived the sessions to be either engaging or very engaging. The same findings were drawn by Deslauriers and colleagues who found that 76 percent of undergraduate medical students found active learning sessions to be more interesting than lectures.¹² Likewise, a study by Sharma et al on MBBS students conducted in India also found high engagement levels to be attached to interactive teaching (81 percent). The reporting of improvement in the skills of speaking publicly and communicating with the group were reported in 86.40% of students in the current study.

This is congruent with the results of the study of Chan et al in which 82 per cent of students reported improved communication skills after peer-assisted and group-based learning activities.¹⁴ The slightly better improvement in the current study can be explained with active facilitation by the faculty, and one-to-one interaction throughout the sessions. Increased reasoning and analytical ability were

felt among 83.30 percent of the participants. An analogous percentage has been published by Burgess et al who observed that 79% of the students believed that small group discussions boosted their analytical and problem-solving skills, which is a primary goal of competency-based medical education.⁴ These results are consistent with effective role of the discussion-based learning in the development of higher order cognitive ability.

In the current research, the percentage of students who indicated that they had built rapport effectively in the sessions was 87.00%. Other articles in the literature have shown the same with Steinert et al in which most learners noted that their teacher to student interaction and rapport during the facilitated group discussions were improved.¹⁵ This underscores the role of faculty facilitation in providing a favorable learning experience.

Respondents (100) of the ongoing study concurred with the fact that time management was stressed during the sessions. This number is also larger than that of George et al in which 92 percent of the students used adequate time organization when performing interactive learning activities.¹⁶ The absolute accord realization of the current study is an indication of careful planning of sessions and expectations clarification. Ninety-one-point four percent of the students were satisfied with the use of electronic teaching aids. Similar satisfaction rates (88) have been recorded in a study carried by Kim et al who assessed the adoption of digital technologies in active environments of learning in undergraduate medicine education.¹⁷

The notable fact in the current study was that 36.40% of students themselves noted that they had been made aware of their deficiencies after watching student presentations.

The same was observed in the study by Panadero et al in which around 34 percent of the students showed more self-reflection after peer learning during student-student interaction activities.¹⁸ This highlights the importance of

peer learning in promoting reflective practice in medical students. As per the preference of the timing, 65.40% students favored the presentation after the day of the group discussions. Similar tendencies were mentioned in the report by Khan et al in which 61 percent of students were of the opinion that shorter periods between discussion and presentation would increase retention and continuity of learning.¹⁹

The analytical method used was descriptive because the main goal was to understand the perceptions of the students, and not to make causal associations. This method is in line with the methodologies that have been used in related studies in education and this will be suitable in informing the curriculum planning and teaching strategies.

Strengths

The research offers systematic content on how the undergraduate medical students perceive small and large group discussions in a competency-based curriculum. The exhaustive and thoroughly systematic data collection was ensured by the sampling of all people and the use of a structured feedback tool. The relevance of the findings to the education of the participants is increased with inclusion of both discussion types and active facilitation of the faculty.

Limitations

The research carried out was at one institution and the data was based on self-reported feedback that can restrict its generalizability and cause a bias in responses. There were no objective learning outcomes and statistical analysis by inference, since the study would have been descriptive and exploratory.

CONCLUSION

The current research shows that Undergraduate medical studies consider SGD and LGD strategies of active learning to be effective. Students indicated high engagement levels, enhancement of communication and analysis abilities, and the levels of interaction with peers after being used to structured group discussions.

Results will be in favor of the incorporation of properly planned group discussion-based instruction within competency based medical education framework, especially in those courses like community medicine which necessitate learning and interacting with fellow learners in group activities. Adding to that, faculty-oriented discussions and presentations on time also can maximize the results of learning and student satisfaction.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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