

UNDERGRADUATE STUDENTS' PERCEPTION OF SMALL GROUP TEACHING IN A MEDICAL COLLEGE

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Abstract

Background: Small group teaching (SGT) is incorporated as a component in the facilitation of Competency-based Medical Education (CBME). Understanding the perceptions of students regarding the strengths and challenges of SGT is crucial for creating an effective learning environment. The primary objective of this study is to: 1) Assess the perceptions of undergraduate medical students regarding SGT under the domains of learning experience, the role of the teacher, communication skills developed, teamwork, and confidence gained; and 2) Analyze the strengths and challenges of SGT through qualitative research methods. **Materials and Methods:** A descriptive cross-sectional study was conducted at a private medical college in Pune, in which 457 medical students participated. A quasistructured prevalidated online questionnaire was used for data collection. The questionnaire comprised of two parts: the first part contained 23 close-ended questions regarding SGT, under five domains which included Learning experience, Role of teacher, Communication skills developed, Team work, and Confidence gained. The second part contained two open-ended questions regarding the students' perceptions of the strengths and challenges of SGT. **Result:** The overall perception of students regarding SGT was positive. SGT was perceived to be useful to their learning process. & improved their communication skills. Students acknowledged the role of the teacher in conducting SGT. Students also expressed that they developed confidence & got experience of working in teams. However, a few students were of the opinion that SGT was stressful and time-consuming. **Conclusion:** The overall results of this study showed that the majority of students perceived SGT as an effective learning tool.

INTRODUCTION

As per the guidelines set forth by the National Medical Council (formerly the Medical Council of India) in India, the Competency-Based Medical Education (CBME) curriculum has been implemented since 2019. This curriculum allocates significant teaching hours to Small Group Teaching (SGT), which is a planned and face-to-face interaction between a small group of students formed to achieve a common objective.^[1,2]

SGT encompasses a wide range of teaching activities in medical education, including dissections, demonstrations, tutorials, practical sessions, seminars, bedside clinics, community visits, problem-based learning, and team-based learning. A common feature of this type of teaching is that the

facilitator works with a small group of students (6-12 students) to discuss a specific topic.^[3,4]

Small group teaching is a student-centered approach in which all students actively participate in a free discussion on a particular topic, with face-to-face contact between the participants leading to purposeful learning. SGT should not be confused with a lecture to a small number of students. Effectively designed SGT creates an open and interactive learning environment with beneficial opportunities for peer-to-peer and peer-to-teacher interactions, thus enhancing communication skills, teamwork, and confidence in students.^[5,6]

While numerous studies have analyzed the traditional teaching pattern of one-way lectures in classrooms, relatively less is known about students' perceptions of SGT, its goals, and its usefulness as a teaching tool.

Therefore, in our study, we aimed to explore students' perceptions of SGT.

MATERIALS AND METHODS

The current cross-sectional study was carried out in a medical college attached to a tertiary care hospital. Institutional ethical committee approval was obtained for the study.

Study population was 457 undergraduate medical students of I, II & III MBBS using a convenience sampling method. Students were not willing to participate in the study were excluded. An orientation session of 1 hour each was conducted for these students, during which they were informed about the study and their consent was obtained. Data was collected using quasi-structured, prevalidated online questionnaire. In this, students' perception of SGT was explored under 5 different domains. They were: SGT as a learning experience, SGT's role in improving communication skills, SGT as a teamwork experience, teachers' role in conducting SGT, and SGT's role in gaining confidence in self-expression. Each domain had 4-6 questions, and a 5-point Likert scale was used to score each item. The average score of all questions in each domain was taken. Student t-tests and one-way analysis of variance (ANOVA) were employed to evaluate the disparities in the students' perception of SGT's efficacy in relation to their gender and academic year, respectively. A significance level of $P < 0.05$ was adopted for both t-tests and ANOVA.

The second section which had open ended qualitative questions about strengths and challenges of SGT. The recurring motifs concerning the advantages and disadvantages of SGT were documented.

RESULTS

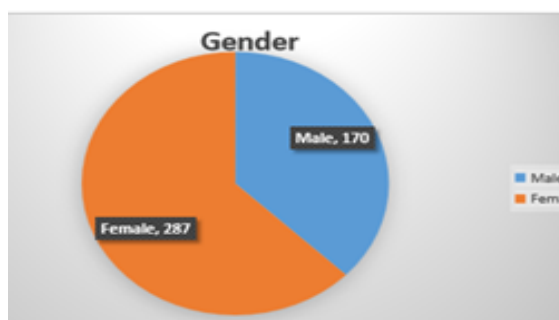


Figure 1: Gender-wise distribution of participants

A total of 457 students participated in the study, with 135 from I MBBS, 131 from II MBBS and 191 from III MBBS. Among these participants, there were 287 females and 171 males.

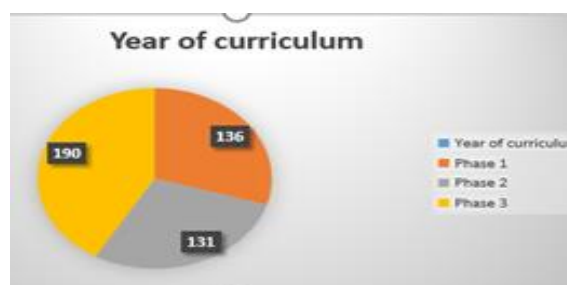


Figure 2: Year-wise distribution of participants

Table 1: Domain-wise average score of students' perception of SGT

Domain	Mean±SD	%
Learning Experience (Max=30)	23.2±3.94	77.33
Confidence (Max=20)	14.80±2.80	74
Team work(Max=20)	15.35±2.46	76.75
Communication Skills(Max=20)	16.32±2.76	81.6
Role of teacher(Max=25)	19.47±3.19	77.8
Overall(Max =115)	89.14±12.75	77.51

Overall students' perception of the SGT program is positive, showing high scores in communication & teamwork skills, with room for improvement in confidence-building. The teaching staff played a vital role in the success of SGT sessions.

Table 2: Effectiveness of SGT across different phases.

Domain	Phase1	Phase2	Phase3	1 st and 2 nd phase	1 st and 3 rd phase	2 nd and 3 rd phase
Learning experience	24.20±4.08	23.51±3.98	22.28±3.61	0.147	0.001	0.005
Confidence	15.53±2.42	14.80±2.54	14.28±2.06	0.011	0.001	0.047
Team work	16.34±2.54	15.00±2.56	14.40±2.11	0.001	0.001	0.713
Communication skills	16.89±2.76	16.21±2.94	15.99±2.58	0.046	0.004	0.483
Role of teacher	20.55±3.25	19.43±3.08	18.73±3.33	0.003	0.001	0.050
Overall	93.50±13.23	88.95±13.01	86.18±11.34	0.003	0.001	0.050

Our analysis revealed a statistically significant difference between phase 1 and phase 2 ($p < 0.03$) and between phase 1 and phase 3 ($p < 0.001$).

Table 3: Comparison of scores gender-wise.

Score in males(n=170)	Score in females(n=287)	p value
88.01±12.78	89.81±12.70	0.148

Additionally, we conducted a comparison of mean scores between male and female students in all five domains. Our findings showed no significant difference between the two groups; however, the mean scores for female students were consistently higher than those of male students in each domain.

5 Point Likert Scale questionnaire
Students perception about SGT on Likert scale

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Learning Experience					
Discussions in SGT helped in active and deep learning and better subject understanding	⑤	④	③	②	①
Learning through SGT helped me solve problems and developed my ability to think	⑤	④	③	②	①
The SGT activities developed long term learning experiences	⑤	④	③	②	①
The experience and skills acquired in SGT helped me in clinical cases	⑤	④	③	②	①
SGT are usefull for the preparation of exams	⑤	④	③	②	①
SGT are stressfull and consume more time and energy	⑤	④	③	②	①

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Confidence					
SGT activities made me more confident in interacting and exchanging my opinions and knowledge	⑤	④	③	②	①
SGT motivated me to work hard	⑤	④	③	②	①
SGT gave me a positive approach towards learning	⑤	④	③	②	①
I felt nervous when I was asked to exchange my views	⑤	④	③	②	①

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Team Work					
SGT taught me to work as a member of a team	⑤	④	③	②	①
Group members listen to each other with patience and attention	⑤	④	③	②	①
Exchange of ideas,knowledge and views are better while learning as team	⑤	④	③	②	①
Group members made me as though I don't have enough knowledge	⑤	④	③	②	①

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
COMMUNICATION SKILLS					
SGT activities improved my communication skills	⑤	④	③	②	①
I listen carefully the opinion of other members in group	⑤	④	③	②	①
SGT helped me to express my views and doubts effectively	⑤	④	③	②	①
I developed the ability to narrate and organize systematically all the points in SGT.	⑤	④	③	②	①

	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
ROLE OF TUTOR					
Tutor in the group,guided as properly about the activities to be done	⑤	④	③	②	①
Tutor gave proper attention to each student during SGT	⑤	④	③	②	①
Tutor gave necessary feedback on my progress	⑤	④	③	②	①
Tutor helped to fill gaps and solved disputes during SGT	⑤	④	③	②	①
Tutor was a bit commanding and talking more	⑤	④	③	②	①

DISCUSSION

The current study was designed in the form of a questionnaire, with the aim of gathering perceptions of students regarding the extent to which they benefited from SGT as a learning method. Overall students' perception of the SGT program is positive. In this study we have recorded higher scores in the domain of Learning experience (77.33 %) & Communication skills (81.6%). Similar findings were noted by Sridevi V et al & Raut S et al.^[13,14] In

both these studies, students scored highest in the Learning experience domain and Communication skills developed domain. Similar results were found in a study by Dewi SP et. al, which emphasized the development of communication skills in students through SGT by asking questions and expressing their views.^[15] In a study conducted by Nasir Aziz, 86% of students found SGT to be useful for understanding complex topics and exchanging knowledge, resulting in enhanced learning experiences.^[16] A study by Joshi KP, Padugupati S, Robins M. study also showed that SGT improved

learning, memory, and exam performance, as well as increased thinking and communication skills, which is consistent with our study's results.^[17]

In contrast to our study, in a study by Pradeep Kumar Sahu, students scored highest in the Learning experience domain but had the lowest score in the Communication skills domain.^[18]

Our study found that students scored high (77%) in the Role of Teacher domain. A study conducted by M. Mir also emphasized the role of the teacher in SGT, stating that teachers should act as facilitators and encourage peer-to-peer interaction to improve communication skills.^[19] Yvonne Steinert's study also highlighted the importance of the Role of Teacher in SGT, with results showing that teachers promote group interaction, provide opportunities for questioning, encourage teamwork, and help solve problems, which aligns with our study's findings.^[20]

Our study demonstrates that SGT provides students with a unique opportunity to work in teams. Students achieved high scores in teamwork (76.7%). They reported learning to listen patiently to others' views and working together for collaborative learning. These findings are comparable to those of Steinert Y who emphasized the importance of team interaction, discussion, and problem-solving to improve learning outcomes.^[20]

In our study, the relatively lower scores (74%) were recorded for the Confidence gained domain. These results are comparable to those found in a previous study by Dewi SP et. al, in which there was no significant increase in student confidence levels.^[15]

In our analysis we have compared scores of various phases. Statistically significant mean difference was noted between students in phases 1 and 2 ($p < 0.011$) and between students in phases 1 and 3 ($p < 0.001$) in terms of their scores for the Confidence gained domain. This can be attributed to the fact that phase 1 students are typically apprehensive and less interactive, but they gradually become more confident and participate actively in discussions.

Moreover, our study results revealed a statistically significant difference in the mean scores for the Team Work domain between phase 1 and 2 students and between phase 1 and 3 students. This highlights the difficulty that phase 1 students face in working in teams, as they are new to the environment and their team members. These results are consistent with a previous study by Matti Aarnio, in which phase 3 students found the teamwork module to be more useful than phase 1 students.^[21]

Statistically significant mean difference was noted between students in phases 1 and 2 and between students in phases 1 and 3 in terms of their overall scores of SGT across all five domains. Therefore, it seems sufficient amount of time is required for students to become accustomed to learning through SGT.

In our study, when asked about the advantages of SGT, around 60% of the students indicated that SGT helped them to understand the concepts more clearly, improved their confidence level, and improved

retention of topics. Approximately 35% of the students felt that SGT helped them to work as a team, listen patiently to others' opinions and enhance their communication skills.

As per a study conducted by Dayananda R, SGT was found to offer improved knowledge retention and a more interactive, self-learning process that increased student-faculty and peer-peer interaction, as well as enhanced students' presentation skills.^[22]

In another study led by Arun Kumar Agnihotri, SGT was found to be an excellent method for cultivating communication skills, critical thinking, teamwork ability, decision-making capacity, and knowledge retention as well as enhancing students' academic performance and attitude towards group work.^[23]

Despite the benefits mentioned by majority of students, approximately 3% of the students reported that SGT was quite stressful and time-consuming. About 2% of the students stated that some students in the group spoke excessively and dominated the discussion, while others did not prepare the topic well and were reluctant to participate actively. Some students also felt nervous about expressing their opinions in groups. In a study conducted by Mirza AU, the challenges of conducting small group teaching (SGT) were analyzed.^[24] SGT was found to be more costly due to the higher student-to-teacher ratio, required more time and demanded highly trained teachers or facilitators. A study by Sara Edmunds identified common limitations of SGT such as low levels of participation by some students and discussion dominated by a few talkative students, making it tutor-centered.^[25] In another study carried out by Hardon and Laidlaw, the usefulness of SGT was acknowledged, but it was also noted that it was the most difficult and highly skilled teaching technique.^[26] In a systematic review study by James Kilgour, it was found that students initially experienced negative emotions and anxiety towards SGT, but later found it quite useful.^[27] Factors influencing satisfaction included the role of the facilitator, the structure of SGT, individual student factors, available resources, group harmony, and feedback taken.^[26]

CONCLUSION

Overall, results of our study showed that a majority of students perceived SGT as an effective learning tool. Although some students identified various challenges faced during SGT, proper orientation and implementation can make SGT an effective teaching-learning method. NMC has assigned significant hours to SGT as it provides opportunity for interaction between learners and educators. Its advantages like increased student engagement, increased collaboration between peers ensuring better learning are well documented. To derive these benefits; orientation of stakeholders, systematic planning & delivery of these sessions is needed.

Recommendations: Orientation sessions for effective group dynamics of small group teachings can be arranged for teachers as well as students.

Limitations: Since our study was conducted in a single institute, its results cannot be generalized to other colleges, as the views of students about SGT in one college may differ from those in other colleges.

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