Original Article

Effectiveness of virtual small group discussion: A qualitative study of dental student's perception

Khaloud Tariq,[1] Waheed Azfar,[2] Zakia Saleem,[2] Fadia Asghar,[2] Shazia Ibnerasa[3]

[1]Department of Preventive and Dental Public Health, Dental Teaching Hospital, University of Lahore, [2]Department of Medical Education, University College of Dentistry, [3]University of Lahore, Lahore Medical and Dental College, Lahore, Pakistan

Objective: To identify the effectiveness of small group discussion (SGD)in dental students and to assess its acceptance using their perception of the virtual environment.

Methodology: The study was conducted using a qualitative, phenomenological in-depth focus group methodology using open ended, semi structured questions. Study sample consisted of 8 – 10 dental students from second, third and final year class. We usedaudiotapes of FGD, which were transcribed and data from transcriptions was thematically analyzed.

Results: Participants had a clear concept of SGD. Most participants preferred in campus SGD's over online SGD's as they were novice to this new system. Many social and environmental factors were deemed to be responsible for its less efficiency. They found online SGD's just to be a temporary alternate for in campus SGD's.

Conclusion: Most participants agreed that of online SGD was less effective learning methodology as compared to in-campus. However, virtual SGD could be accepted with the elimination of barriers.

Keywords: Small group discussion, virtual, dental students.

INTRODUCTION

Small group discussion (SGD) may be defined as any interaction between three or more people on a common purpose or a shared identity. Teaching in small groups is becoming an important component of undergraduate dental education. It mainly includes tutorials, problem-based learning and case-based learning.[1] SGDs can also be conducted in form of educational games, role plays and simulations where, its fundamental principle is to place the available resources within the group to be used by everyone. They are most effective with the use of efficient leadership; i.e., the teacher, who needs to define his role early on.[2]

The advantages of SGDs include active participation of all individuals, understanding each other's point of view and enabling the leader to identify participants requiring help. Disadvantages include discussion being led off track easily, time consuming and meticulous planning in order to be effective.[3]

Covid-19 resulted in closure of educational institutes across the world and shifting academic activities from face-to-face teaching to virtual platforms, including lectures as well as small group activities.[4,5] Previous research has demonstrated that placing students in smaller virtual group makes discussion repetitive, resulting in high order critical thinking.[6] Moreover, virtual sessions enabled the students to experience virtual problem-based learning (PBL), case-based learning (CBL), task-based learning (TBL) and tutorials by utilizing breakout rooms.[4,5]

Amongst disadvantages of virtual teaching are lack of infrastructure, technology and technical skills.[7] SGD proved as an effective tool in medical education to promote active discussion and foster deep learning.[8] However, there is paucity of data from this part of world. The current study intended to explore the effectiveness and acceptance of virtual SGD among dental students.

METHODOLOGY

A qualitative methodology was adopted in this study and non-random sampling was used to select participants. The study was conducted at University College of Dentistry, University of Lahore from July to November 2020. Focus group discussion was chosen as the data collection method. Ethical approval (Letter No. UCD/ERCA/20/37) was obtained from the ethical review board of the University College of Dentistry. An informed consent was taken from all participants.

Inclusion criteria for focus groups comprised of dental undergraduate students who have been studying in an integrated curriculum and were well versed with the concept of SGD, PBL and CBL. Nine students were selected; 3 from each class of 2nd, 3rd and final year, respectively. The reason for choosing 9 students was based on literature which states that a group of 8 – 10

Table 1: Themes and sub-themes associated with perception and effectiveness of online SGD.

∨ **Theme**	**Sub-theme**
Group size of SGD	Group of 5 – 10 individuals Group of 10 – 25 individuals Group of 15 – 20 individuals
Understanding of SGD	Exchange of ideas Facilitates bonding Stimulates leadership skills
In-campus SGD Effectiveness	Effective learning strategy Physical interaction facilitates learning Conducive learning environment Motivating
In-campus SGD Effectiveness	
Virtual SGD Experience Not interactive Ineffective Need of the hour	Social and environmental factors affect its impact
Online Student-Student & Tutor Interaction Unstimulating	One way interaction Uninspiring
Continuation of Virtual SGD sessions	Acceptable in emergency situations Improvement to be made based on feedback Technical skills need to be delivered

participants is considered ample and will give adequate data for analysis purpose.[9]

To facilitate the process of constructive discussion, homogenous sampling was done with almost equal representation of male and female students.[10,11] The students' initial communication was through a social texting application as remote learning was in process and it was an effective way of reaching them. They were informed prior to group discussions the date, time and duration of meeting. All FGDs were audio and video taped.

The FGD were transcribed verbatim from the video recording by one of the researchers (ZS), who was present in the session. Other researcher (WA) verified the transcribed material and corroborated it with his notes. Codes were established after thorough evaluation of the transcript by principal researcher (KT) and second researcher (WA) separately. Respondent validation was done amongst researchers and transcript amended accordingly.

The focus group discussions were held online by 2 researchers. Both researchers were medical educationists with no involvement in teaching, assessment or evaluation of the students. First focus group session was concluded in 70 minutes after saturation was achieved. Second session was conducted after initial analysis to seek further information and clarification which lasted for 60 minutes. The interview was guided by semi-structured, open-ended questions which allowed discussion within the realm of topic of interest amongst the participants.[1,9]

Statistical Analysis: The theoretical framework followed that of phenomenological approach as the study aimed to evaluate the students' experience of "how" they perceived the phenomenon of virtual learning which is the basis of this approach.[10] Data were entered in Qual Sys software for further analysis. Inductive thematic analysis was carried out to explore broader themes within the data and interpret them as guided by the content. Researcher (ZS) was able to request the participants to share their views on the themes that emerged and if they aligned with the opinions shared, which ascertained their validation.

RESULTS

Table 1 depicts themes and sub-themes obtained after analysis. It is explained in detail with examples in consequent text.

Perception and understanding of SGDs: Most of the participants defined SGD as discussions carried out in smaller groups. They also described SGD by the group size, although differed in their perception relating to the number of people in a group. Few stated that it could go beyond 10 *i.e.*, 15 – 20, many believed that small groups have 5 – 10 people. They also viewed this activity as sharing of perceptions on a particular topic, where the discussion enabled people in group to voice their opinions. Another interesting view shared was that they deemed leadership as part of an effective SGD.

In-campus SGD effectiveness: There was consensus among the participants that in-campus SGDs were an efficient mode of learning."I think everyone agreed that online thing is a different issue but in-campus, they were very effective and the topics that we have done in our SGD in the form of PBLs, we have them well in our mind". They believed that having a learning environment is very important in understanding concepts andthat can only be achieved in-campus.

Virtual SGD experience: Participants stated that interaction played a major role in learning. Non-verbal cues also helped them stay motivated thus, enhancing their learning. Lack of participation deterred them from fully contributing. For example, "In online sessions there isn't much participation, as many stay quiet and mute themselves. During on campus, they were more interactive".

Few participants believed that it was need of the hour and good alternative to in-campus sessions. Social and environmental factors played a role in rendering the sessions relatively ineffective. One of the most cited problems was of unstable connection as frequent disconnection hindered the flow of discussions.

Online student-student and tutor interaction: Participants were split with regards to their efficiency. Many believed that in-campus provided a better opportunity for effective communication as compared to virtual sessions; "Some students are writing their questions in the chat box and they are not interacting with other students".

Moreover, their reason was that physical interaction played an important role in learning and that is what was missing in online sessions. Connectivity issues caused hindrance in the interaction, which caused few students to lag behind the discussion. Other group of thought was that there was virtually no dissimilarity in online and in-campus interaction.

Continuation of virtual SGD sessions: Most participants preferred to have in-campus sessions. Reasons were mainly associated with perceived effectiveness of in-campus SGD as compared to online setting. Moreover, as this was the first-time students were introduced to this mode of teaching and learning, they were still getting acquainted to this new system where they had to learn how to use technology as an alternative mode.

"I think it is better to get the knowledge in the classroom environment, in the on-campus environment. For technology, I don't think we are still that much trained to have these facilities". However, they also understood its importance in special circumstances like that of pandemic and realized that it can be employed as an alternative.

DISCUSSION

Since the unprecedented crisis of Covid-19 pandemic, majority of the studies assessing the effectiveness of learning in undergraduate dentistry were of quantitative nature and mostly looked at the asynchronous format. Our study, is a qualitative type, aimed at SGD, a synchronous form of learning.[12] The perception of participants regarding the meaning of SGDs was unanimous, that it was an interactive activity of consisting of 5 – 10 participants.

This is closely related with AMEE Guide 48, where 6 – 8 participants making up a small group for learning purposes is considered appropriate.[13-16] This was similar to study by Kaur et al, who reported regular in-class sessions to be more convenient than virtual ones.[17] Furthermore, Keis et al, reported that an in-person interaction created a sense of community and added to confidence of students.[18] Our study had similar findings.

While it is widely believed that lack of physical interaction resulted in a lower level of understanding during virtual SGDs, participants, Chandran et al suggested that the multimedia aides at their disposal proved to quite facilitative.[12] We believe that students have come to terms with online SGDs, even with the flaws, as they still assist in cognitive development of the topic of discussion, however meagre. Further to this, removing or at least minimizing such hinderances will raise the quality of experience expected of online SGDs.

With majority of professional activities having shifted to online platforms due to pandemic, it is important that educational activities such as SGDs also be practiced virtually. Not only does technology brings advantages unbound of geographical locations, it adds multimedia experience which aides in better comprehension. A recent study found that accessibility to distant expertise was considered an important feature by students.[12] Our study led to understanding that virtual sessions were facilitative of this important feature.

CONCLUSION

Participants perceived virtual SGDs to be less effective as compared to in-campus sessions. However, they accepted it owing to special circumstances. To get a better understanding of hindrances, further quantitative studies may be conducted, and the results used to enhance the virtual SGD experience.

Author Contributions:
Conception and design: Khaloud Tariq.
Collection and assembly of data: Zakia Saleem, Waheed Azfar.
Analysis and interpretation of data: Waheed Azfar, Khaloud Tariq, Shazia Ibnerasa.
Drafting of the article: Khaloud Tariq, Waheed Azfar, Zakia Saleem, Fadia Asghar.
Critical revision of article for important intellectual content: Fadia Asghar, Shazia Ibnerasa.
Statistical expertise: Waheed Azfar, Khaloud Tariq, Shazia Ibnerasa.
Final approval and guarantor of the article: Shazia Ibnerasa.
Corresponding author email: Khaloud Tariq: khulood.td@gmail.com
Conflict of Interest: None declared.
Rec. Date: Jul 5, 2022 Revision Rec. Date: Oct 11, 2022 Accept Date: Mar 5, 2023.

REFERENCES

1. Steinert Y. Student perceptions of effective small group teaching. Med Educ 2004;38:286-93.
2. Stenhouse L. Teaching through small group discussion: Formality, rules and authority. Camb J Educ 1972;2:18–24.
3. Sahu PK, Nayak S, Rodrigues V. Medical students' perceptions of small group teaching effectiveness in hybrid curriculum. J Educ Health Promot 2018;7:30-5.
4. Tabatabai S. COVID-19 impact and virtual medical education. J Adv Med Educ Prof 2020;8:140–3.
5. Hilburg R, Patel N, Ambruso S, Biewald MA, Farouk SS. Medical Education during the Coronavirus Disease – 2019 Pandemic: Learning From a Distance. Adv Chronic Kidney Dis 2020;27:412-7.
6. Hamann K, Pollock PH, Wilson BM. Assessing Student Perceptions of the Benefits of Discussions in Small-Group, Large-Class, and Online Learning Contexts. Coll Teach 2012;60:65–75.
7. O'Doherty D, Dromey M, Lougheed J, Hannigan A, Last J, McGrath D. Barriers and solutions to online learning in medical education – an integrative review. BMC Med Educ 2018;18:130-4.
8. Qamar M, Ahmad A, Niaz K. Learning through small group discussion versus didactic lectures. PAFMJ 2015;65:386-90.
9. Kitzinger J. Qualitative research. Introducing focus groups. BMJ 1995;311:299-302.
10. Creswell JW, Poth CN. Qualitative inquiry and research design: Choosing among five approaches. 4th ed. Los Angeles: SAGE; 2018.
11. Marks RB, Sibley SD, Arbaugh JB. A Structural Equation Model of Predictors for Effective Online Learning. J Manag Educ 2005;29:531–63.
12. Chandran DS, Kaur S, Deepak KK. Student perceptions on synchronous virtual versus face-to-face teaching for leader-centered and participant-centered postgraduate activities during COVID-19. Adv Physiol Educ 2021;45:554-62.
13. Edmunds S, Brown G. Effective small group learning: AMEE Guide No. 48. Med Teach 2010;32:715–26.
14. Jaques D. Teaching small groups. BMJ 2003;326:492-4.
15. Exley K, Dennick R. Small group teaching: Tutorials, seminars and beyond. London: Taylor & Francis; 2004.
16. Mccrorie P. Teaching and leading small groups. In: Understanding Medical Education: Evidence, Theory and Practice. 2nd ed. Wiley; 2013.
17. Kaur N, Dwivedi D, Arora J, Gandhi A. Study of the effectiveness of e-learning to conventional teaching in medical undergraduates amid COVID-19 pandemic. Natl J Physiol Pharm Pharmacol 2020;10:563-7.
18. Keis O, Grab C, Schneider A, Öchsner W. Online or face-to-face instruction? A qualitative study on the electrocardiogram course at the University of Ulm to examine why students choose a particular format. BMC Med Educ 2017;17:194.