

Comprehensive Case Discussion in Dental Curriculum–A Review

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ABSTRACT

Discussions are excellent strategy to enhance students' motivation. When discussions are carried in a comprehensive or an integrated manner it will sharpen a number of skills of a student considering different points of view. This type of discussions should be introduced in dental curriculum as the principal skills (which are to listen, to respond and to explain) that will be better manifested among the students. The usage of modern technologies such as buzz groups, time to think, and syndicates boost students to discuss among themselves and improve knowledge and understanding. Various newer learning methods have replaced traditional teaching learning methods due to limitations of conventional methods. In developing countries, due to high prevalence of illness and disease, oral physicians are required to provide top quality dental care without compromising general health of patients. All over the world, medical educationists recognise the need for comprehensive medical training or in an integrated manner. The aim of comprehension/integration is to increase the efficacy and efficiency of teaching learning process. In 1997, the medical council of India strongly commended comprehension/integration in undergraduate medical training. Comprehensive learning is best accomplished by a planned unit consisting of learning objectives, alternative teaching learning methods and media, evaluation plan, time table and list of learning resources. So by constructing a structured plan contradictory concepts and opinions could be minimised and irrelevant areas also get eliminated initially at the planning stage. Therefore there is a need to upgrade and modify the teaching learning pattern in the dental and medical curriculum so that it will help them to succeed as an independent clinician.

Key words: Comprehensive case discussion, Dental curriculum, Teaching learning methods, Medical education

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INTRODUCTION

In developing countries, due to their high prevalence of illness and disease, oral physicians are required to provide top quality dental care without compromising the general health of patients.

There is not enough time for chair side teaching for learners in the planned curriculum to comprehend multiple facets of systemic diseases and correlate them to the complaint; to design a suitable and a proper dental treatment plan. In order to alleviate the need for students to be exposed to patients with fluctuating degrees of encompassing health problems, medical and nursing faculties use non-existent scenarios that resemble to actual ones. In dentistry, this kind of scripts are rarely used and structured integration is rarely discussed in the classroom [1].

Connecting “systemic or medical condition” to “oral condition” and preparing dental undergraduates to diagnose and treat oral diseases and manifestations are essential aspects of student training.

Learning is a dynamic and active process. In order for students to gain understanding, teachers must create a conducive learning environment in which they will be able to actively engage and get involved with the topic of discussion.

Students generally learn more constructively and efficiently when they are diligently and collaboratively involved in the process of learning [2].

A good example of an active learning process is Interactive Case Discussions (ICD)/comprehensive case discussions. Through its application, theoretical concepts can be applied in practice and help bridge the gap between theory and practice [3,4].

Peer group influences while discussions have been studied extensively in educational institutions, but relatively little research has focused on task oriented peer groups in college settings [5].

The process of teaching peers and being taught by peers is a efficacious way of improving understanding [6,7].

Teachers should focus not only on the explicit curriculum but also on the implicit domains of the curriculum in order to implement effective teaching [8].

Importance of case discussion in dental curriculum

Primary focus of bringing this type of discussions into action is because it aids students to succeed as an independent oral physician and to grow and develop diagnostic and treatment planning skills [8-10].

Methodology for comprehensive case discussion

Teaching learning media

Non-projected visual aids: The conventional chalkboard is wooden and painted black; hence it is popularly called blackboard. It helps students in note taking. For sake of keeping the audience's interest alive, only minimum necessary time should be spent on the chalkboard.

The teacher should use chalkboard for: Writing key words (headings and new terms), listing items, drawing simple line diagrams and solving problems; step by step build-up of concepts and organisation of structure.

The main limitations of the chalkboard are: While using it, the teacher loses eye contact with students. The drawings are erased and cannot be preserved for future use.

Projected visual aids: Another great method is the use of projectors. One can prepare the transparency of extras in advance for projection during the presentation.

Audio aids: Audio tapes can be adapted to any teaching/ learning situation for any size of audience and also for self-learning. Audio tapes can be used to provide narration for slide sequences, give commentary for silent films and film strips, demonstrate heart sounds and give instructions for use of equipment.

Professionally prepared audio tapes are available which have recorded dialogues among subject experts on different topics. These audio tapes are good media for presenting discussion among experts on controversial topics.

- **Written aids:** Although textbooks and manuals are commercially available, the teachers may have to prepare hand outs to go with lecture presentations. Hand outs could be of two types
- Completed hand outs
- Uncompleted hand outs

Completed hand out contains the total contents of the lecture with additional material and references. Uncompleted references contain the framework of the lecture material and diagrams but it leaves gaps to be filled by students during lecture. The hand outs should be readable and attractive, giving useful information that is not readily available in textbooks and manuals.

Patients and real objects: Patients are the ideal media for teaching learning of the following: manifestations of disease (symptoms and signs), natural history of diseases, diagnostic and therapeutic problem solving, response of patients to treatments, practical skills such as physical examination, communication skills such as history taking and attitudinal skills such as patient listening. However, due to time and other variables such as availability, patients alone may not be sufficient and various other media need to be employed in study of chronic diseases, the study of the varied manifestation of a disease and the study of uncommon diseases.

Teaching learning methods

Symposium: When a large group needs to hear an authoritative overview of several aspects of a new subject or controversy, a symposium is a good tool.

Panel: Symposium is basically the same. It is more advantageous to use the panel method if interaction between resource persons is desired.

Group discussions

Controlled discussion: Typically, it is used at the end of a presentation to get the class to revise, understand, and give feedback. Teachers strictly control participation.

Free group discussion: In this scenario, the teacher acts as an observer while the student controls the discussion and topic. In addition, the method helps to change attitudes, feelings, and human relationships, while enhancing observation, self-awareness, and openness to new ideas. It also deals with ethical issues and the doctor patient relationship.

Buzz group: Within a lecture or a group discussion, groups of two to six members discuss issues or problems for a brief period. It provides a break from monotony of a long lecture and is an active learning process.

Brain storming: Group discussions in which spontaneous ideas and solutions to a problem are heard without criticism. New ideas are generated, problem solving and decision making is improved and creative thinking is enhanced.

Syndicate: There are groups in class, and each group works on an interrelated problem. Students learn how to gather and sort information.

T-group: A therapeutic group technique where group members share their problems and relationships.

Seminar: In instances where a resource person is available to guide advanced learners, seminars are an ideal method of gaining an intensive understanding of a subject.

Tutorial: A teacher guides a small group of learners to clarify doubts, increase understanding, and enhance knowledge of the subject.

Demonstration: Teachers use this method to demonstrate a skill or a phenomenon to students while

they watch. The explanation precedes the demonstration and the actual practice follows.

Practical: Bridges the gap between theoretical knowledge and practical application. The process is an active one, which develops the qualities of scientific thinking, such as observation, problem solving, and decision making.

Role play: It is defined as acting out a situation. It is effective in manipulating attitudes. This helps learn communication.

Workshop: The process in which experienced individuals in responsible positions meet with experts to find solutions to problems that have arisen as a result of their work.

Simulation: Simulation is a teaching method where a real situation is simulated through various means. It has varying uses depending on its application. It can help develop psychomotor skills, problem solving abilities, or even bring about attitude and self-awareness changes.

Limitations of traditional learning methods are

- Students' focus is skewed in the wrong direction as there is tendency to take notes instead of deeply understanding and comprehending new ideas.
- Presentations take up too much time; hardly any time is left for practice.
- Many students lose their individuality because of the large size of the class.
- This trait suppresses the creative side of their personality and they at no time get to know their strengths.
- Therefore, there was a need to formulate and modify some newer techniques for case discussion.

DISCUSSION

Newer methods of case discussion in dental curriculum

In a study conducted by Jason R Frank, et al. in the year 2010 they described that CBME competency based medical education has evolved from the outcomes movement in the 20th century to a focus on accountability and outcomes, organized around competencies, centred on the learner, and reducing the focus on time based curriculum. The CBME has tremendous implications for the design of medical curricula and can do a great deal to reshape the enterprise of medical education. The author stated that this emerging competency based medical education approach and its related concepts, inviting medical educators to further elaborate the promise as well as the potential perils of competency based medical education in the 21st century [11].

Brenda S Bray, et al. in the year 2011 assessed human patient stimulation based learning that involved use of standardized patients, role playing exercises with-peers, and skills based evaluations. More recently, Human

Patient Simulations (HPS) have been incorporated into pharmacy curricula in the United States. In healthcare simulations, high fidelity manikins serve as simulated patients. Students are exposed to many activities aimed at enhancing their confidence about evaluating and managing clinical situations. Simulation activities offer students a chance to practice their skills and to integrate knowledge, communication, professionalism, and clinical application [12].

Mckerlie RA, et al. in 2012 evaluated student's insight regarding syndicate group learning. In his study, 90 students were divided into five groups and each group performed practical work surveying and mounting casts on an articulator using previous knowledge. In the self-regulated group session in their study, 82% of students found the group supportive and encouraging whereas 46% of respondents felt that group members contributed equally to the task, 37% disagreed. Authors concluded that results show syndicated learning helped students achieve course objectives and the syndicate group approach was said to make students work harder by instilling a sense of responsibility within the group by teaching their peers and learning from their peers, they also reported learning more deeply [13].

Anbarasi K, et al. in 2015 evaluated the efficacy to apply structured and comprehensive case-based discussion in dental education so as to improve five necessary skills among Indian students acquiring dental education. A study was conducted with 30 UG students of third year in five focus groups. To achieve competence, revised Bloom's taxonomy was applied. They found that integrated case based discussions improved students' performance, and they positively accepted the practice. Authors concluded that in order to improve students' competency levels, particularly related to course and basic science collaborative seminars with case script discussions should be offered and should be included in the curriculum.

Krumsvik RJ, et al. in 2020 evaluated the Dental student's training using Student Response System (SRS) and discussion with colleagues to increase the understanding of the need for professional communication skills during practice. The case presentation emphasizes the need to recognize the factors that lead to dentist students' feeling nervous and stressed during practice periods, and how SRS suggests supervisors and students become more aware of such issues. Before dental students begin their practice in the public dental health system, this, as well as focusing on good communication skills, seem to be crucial to consider [14].

Shrivastava SR, et al. in 2021 explored the benefits of journal clubs in medical training and identified the important elements that are to be considered for these journal clubs in the education in which 51 studies were included. They found that in spite of numerous utilisations of journal clubs in different medical specialities, very less number of institutes run journal clubs pointing the field of medical education. The author concluded that all medical institutes should favour to

manage medical education journal clubs in a structured and planned way [15].

Comparison between new and old methods of case discussion

Lohe, et al. in 2015 evaluated the efficacy of syndicate learning in oral medicine and radiology in the 80 final year BDS students and compared them with traditional learning. They found that the learning in the group who underwent syndicate learning was significantly high as compared to the group who underwent the traditional learning. The author thus concluded that Syndicate groups can make experience of learning more engaging; give rise to many opportunities for creative interchange of ideas and active involvement and interaction among students [16].

Olle Ten Cate in the year 2017 stated that competency based medical education is an individualized approach to workplace training that is distinguished by two factors: a focus on specific domains of competence, and an independent approach to time. A person's preparedness for unsupervised practice is not determined by the length of their training, but by their level of competency. This shift in focus makes competency based medical education different from traditional training [17]. As the apical council aims for competency based medical education, it would be wise and beneficial to include a PBL Problem based learning approach for statistics as well. Students perceived PBL as a student centered teaching-learning method encouraging analytical thinking, critical thinking, and self-directed learning [18].

According to a study conducted by Neha Uppal, et al. in the year 2019 the authors introduced syndicates (as a teaching learning technique) in first year MBBS student involving 115 students, they found that most students agreed that such sessions helped them understand concepts better; allow them to learn from their co-workers, provided laid back students with an opportunity to present, and they wished such sessions occurred more often and regularly. The authors concluded that by using syndicate groups for learning, students can have a more enjoyable experience; they can engage in creative interactions and learn better, as compared to teacher led methods [19].

Future implications

Incorporating comprehensive case discussions along with newer and effective ways of teaching-learning modality in dental curriculum will upgrade the skills and knowledge of a student for becoming a self-contained practitioner. This pattern of learning can be contributory for amplifying the skills necessary for lifelong learning.

CONCLUSION

Present teaching approach and techniques stress the importance of enhancing ability of students to solve clinical problems and develop perception and mind-set that would be beneficial and helpful later on in medical practice. This review suggests that newer approach like

syndicate or comprehensive case discussions are better than "monotonous" traditional methods. By following this strategy, students are able to gain subject specific knowledge and are also able to apply the obtained knowledge to solve the problems. They get a chance for active engagement and better understanding in this type of discussions.

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