DENTAL STUDENTS ASSESSMENT OF THE THEORY AND PRACTICE THAT IS PRESENTED IN GENERAL DENTISTRY SIMULATION I

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ABSTRACT

This article aims to find out how the dental students at New York University College of Dentistry (NYUCD) evaluate the balance between the amount of theory taught and practice time allotted in cavity preparation presented in General Dentistry Simulation I so that recommendations to improve the curriculum can be formulated. An IRB approved anonymous six-question survey questionnaire was distributed to the dental students in the second (D2), year at NYUCD over a 3 year period. The questionnaire consisted of scaled responses so as to gain insight into the undergraduate opinion and their perception of whether the amount of theory and practice of cavity preparation presented in General Dentistry Simulation I was sufficient. Overall, the majority of the dental students felt that there was enough theory and practice for cavity preparation. Each succeeding second year students wanted more practice time.

KEYWORDS

Cavity Preparation, Theory,Practice, Dental, Simulation

1. INTRODUCTION

At New York University College of Dentistry (NYUCD), the General Dentistry Simulation I (GDS I) course consists of didactic lectures in the classroom and hands on simulation in the bench lab. The lecture theory includes dental anatomy, operative dentistry, and biomaterials. The bench lab includes hands-on approach, which reinforces the theoretical restorative dentistry.

Feedback is necessary to adequately evaluate the amount of theory and practice time. There is a tremendous amount of information and knowledge that a dental student must master in order to be a competent dentist. In addition the dental students must learn technical skills in order to treat patients.

In this study, we have surveyed students over a 3 year period. The student's perspective pertaining to the balance between the theory and practice in the first year introductory course of General Dentistry Simulation I was assessed. The objective is to find out how the dental students evaluate the balance between the amount of theory and practice time for cavity preparations, and

how the opinions of the D2 class changed over time, so that recommendations can be made to improve the curriculum.

2. MATERIALS AND METHODS

This study was registered with the University Committee on Activities Involving Human Subjects at New York University. An IRB approved anonymous survey form was distributed to the dental students in the second (D2) year at NYUCD from 2015-2017. The questionnaire consisted of scaled responses to six questions that offered insight into the undergraduate opinion and their perception of whether the amount of theory taught and practice time allotted of cavity preparation in GDS I was sufficient.

A consent information sheet was provided to each student explaining the purpose of the study. In order to participate in this study, the student must have completed the first year GDS I course at NYUCD. The participants were told that the study was completely confidential, that they do not need to write their name or student ID. In addition, they were told that there was no risk in participating in this survey and that their participation was entirely voluntary. The research is anonymous, no monetary rewards and, no increase in grade were offered. The participants could refuse to participate or withdraw at any time without penalty. Nonparticipation or withdrawal would not affect the services they received at NYUCD.

The survey started with asking the student to circle the year of dental school that they were in. Next, the students were asked to circle “yes” or “no” as to whether they received enough theory for cavity preparation in GDS I, and whether they received enough practice time for cavity preparation in GDS I. The survey continued with the question as to whether the students felt that they should have more theory or practice time. Next, the students were asked if they wanted 0, 1, 2, or 3 more hours per session for practice. The survey was completed with a question asking the students to circle their gender.

The responses were collected and categorical responses were collated and analyzed by designated investigators. If there was a question, the principal investigator made the decision. Counts and percentages are reported. Descriptive statistics were obtained for all variables.

3. RESULTS

Out of a possible 371 students in the 2015 second year class, 304 responses were obtained. Out of a possible 372 students in the 2016 second year class, 246 responses were obtained. Out of a possible 382 students in the 2017 second year class, 270 responses were obtained.

Figure 1 shows that 86% of the 2015 second year students, 90% of the 2016 second year students and 81% of the 2017 second year students thought there was sufficient theory for cavity preparation.

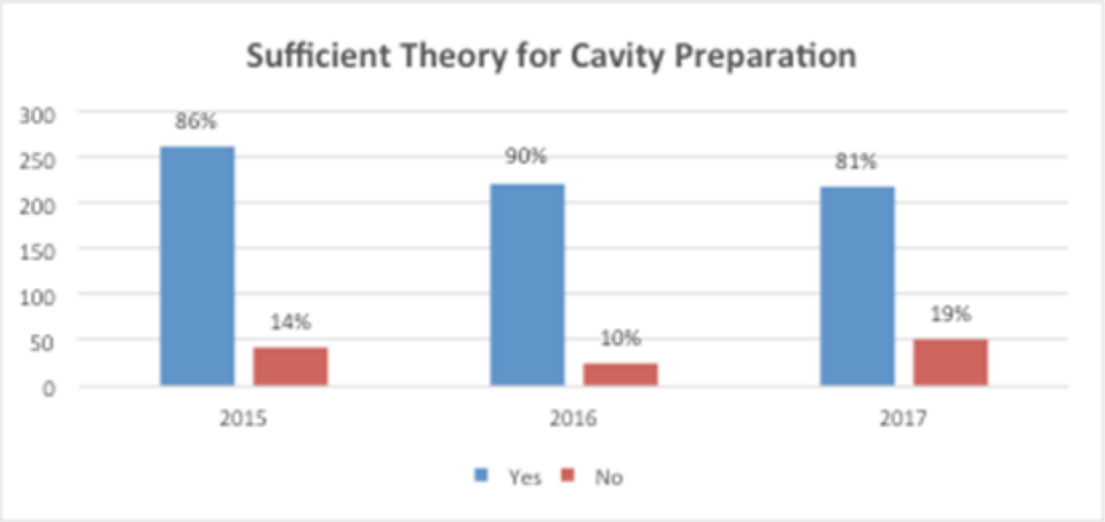

Fig 1 Sufficient Theory for Cavity Preparation

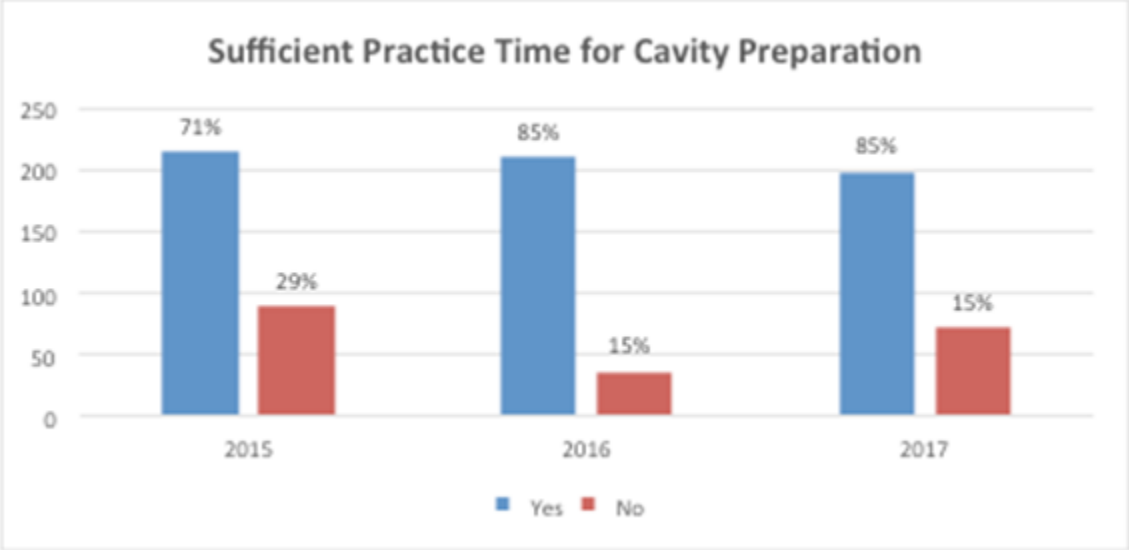

Fig 2 Sufficient Practice Time for Cavity Preparation

Figure 2 shows that 71% of the 2015 second year students, 85% of the 2016 and 2017 second year students thought that they had enough practice time for cavity preparation.

Figure 3 shows that the 2015 second year students thought that they should have more theory (53%), whereas the 2016 and 2017 second year students thought that they should have more practice (76% and 71% respectively).

Fig 3 More Theory or Practice Time

Fig 4 How Many More Hours of Practice time

Figure 4 shows that the 2015 and 2017 second year students want one more hour per session of practice time, (42% and 41% respectively). 36% of the 2016 second year students did not want any more hours of practice time per session.

4. DISCUSSION

Students' perception of dental learning involves many factors. Not only must they learn a large amount of basic scientific facts, they must also develop motor and technical skills. Faculty interaction including feedback is essential in developing skills needed (1). Also students are graded on both their factual knowledge and on technical skills. Therefore the balance between theory and practice is important for student development. The skills that the students learn in preclinical dental simulation translate into success in the clinical setting.

Henzi surveyed dental students in over twenty North American dental schools and reported that students viewed clinical learning experience and opportunity to work with knowledgeable faculty to get their immediate feedback as strengths in the dental curriculum (2).

Effective teaching behaviors in dentistry have been studied by Schonwetter through a total of 175 dental students, who provided a total of 695 qualitative statements reflecting their learning in two different contexts: the classroom and the clinic. Effective teaching in the classroom was best defined by organization and rapport, while in the clinic, rapport was the most frequently emphasized behavior. In addition, enthusiasm was described to be an effective teaching quality in both classroom and clinic (3). Learning in a clinic setting is difficult and a study by Irby recommended increasing continuity of patient care experiences and contact with faculty members who could assess and provide feedback to students (4).

Students view learning in a clinical setting as valuable and necessary as it pushes them to demonstrate a range of skills, broad didactic knowledge, professionalism, and empathetic behaviors. Students view earlier introduction to the clinical environment as a good way to integrate knowledge from basic to clinical sciences, under the supervision of a trained, professional clinician (5). Therefore the cavity preparation practice the students have is valuable for when they are in an actual clinical environment. In addition audit and feedback have been shown to improve professional practice and skills in healthcare (6). Student feedback is useful in assessing educational issues.

The learning environment of the dental clinic, created by clinical teachers, mainly shapes and determines what students think as 'sufficient' or 'good practice' in learning clinical techniques. The level of interaction between student and clinical teacher was determined to be a big aspect of student's successful acquisition of the techniques. Furthermore, the theory based education prior to the clinical practice was determined to be essential in productive clinical learning, especially when taught in small groups (5). Dental students require both academic as well as clinical competences. Students need to learn procedural skills and be able to perform a range of treatments required for all kinds of patients. The ability to cope with the unexpected (dental emergencies) can also only be strengthened through clinical training (7).

In our survey over 80% of each class reported sufficient theory for cavity preparation. Each successive D2 class preferred more practice time to more theory. 76% of the 2016 D2 class and 71% of the 2017 D2 class wanted more practice compared to 42% of the 2015 D2 class.Successive dental school classes prefer more practice time, which would help them with patient care.

Faculty who motivate students by explaining difficult concepts, displaying interest in the subject, showing compassion and caring are perceived by students to be more effective teachers than those who emphasized expertise (8). Self assessment is an important skill that students need to master and faculty needs to encourage this. Foley et al found that students and peers tended to overestimate their competencies compared to faculty (9). Tuncer noted that better students tended to underrate their evaluations while lower performing students overrated their evaluations (10). Successive dental school classes may be more critical of their self assessment and therefore prefer more practice time.

5. CONCLUSION

Dental students will provide oral health to society. They will need to be able to transfer their science knowledge to clinical diagnosis in order to treat their patients. One goal of the dental curriculum is to prepare students to be dental clinicians.Cavity preparation is an important skill for students.

Overall, the majority of the dental students at NYUCD felt that there was enough theory and practice for cavity preparation. Although most students responded to have had sufficient theory and practice time, they also acknowledged that longer sessions in either theory or practice time for cavity preparation would be more optimally ideal in order to improve the curriculum. In general, the subsequent classes preferred more practice time. A possible solution is to extend the time for cavity preparation before the students start their clinical rotation.

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