Original Article

Dental Students' Interaction with Clinical Instructors: Students' Perspective and Dental School's Administrator Dean's Response

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Abstract

Objectives: To evaluate the impact of the clinical instructor communication on dental students' clinical training in Faculty of Dentistry, Universiti Teknologi Mara (UiTM).

Materials and Methods: A sample of 174 undergraduate clinical dental students were recruited to complete the Clinical Education Instructional Quality Questionnaire (ClinEd IQ) which consists of forty-five questions, forty-three multiple choice questions and two open-ended. The multiple-choice questions consist of 3 subscales which were measured on a six-point Likert Scale from "strongly disagree" to "strongly agree". The open-ended responses were analysed using thematic analysis. This paper discusses the Subscale of interaction with clinical instructors and the open-ended responses.

Results: The responses of 150 students were evaluated. The students rated their interaction with instructors with a mean score of 4.64 on a six -point scale. There was a significant difference between mean scores for each academic level with year five students' score being highest. There were four areas of concern identified through the open-ended responses.

Conclusion: While the quality of supervision in terms of interaction with clinical instructors is considered satisfactory and the students generally reported positive experiences, there is room for improvements especially regarding areas of concern.

Keywords: Clinical education; Dental Students; Instructional effectiveness; Dental education; Teacher evaluation.

Abbreviations: ClinEd IQ (Clinical Education Instructional Quality Questionnaire); DREEM (Dundee Ready Education Environment Measure); MedEd IQ (Medical Education Instructional Quality Questionnaire); SPP (The Students' Perspective Project).

Introduction

Clinical supervision is an integral part in a learning process with the aim of training dental students to be the future professionals, preparing them to deliver treatment for patients [1]. Studies from the medical field indicated that a positive and humanistic clinical environment contributes to a better patients' care [1, 2]. Many of the medical clinical teaching guidelines from the literature are relevant to clinical education in dental schools. In both medical and dental education, the clinic is a patient care facility and a learning environment [1]. Clinical teaching in medical education has been extensively examined, whereas in a dental education context, clinical teaching received less focus.

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In the context of clinical environment in general and the relationship between instructors and the students in particular the literature shows many studies evaluating medical clinical training [3-5], whereas few studies evaluated the impact of this relation on the training of dental students. The interaction, between the clinical teacher and the students, aims to deliver knowledge to the students while giving care and treatment to the patients which renders this situation rather complex. Many studies attempted to characterize the features of the effective teacher and what constitutes a positive learning experience in the clinic [6-9].Other studies attempted to outline the features of effective clinical teachers as being caring, showing empathy, patience, professionalism, and fairness [10, 11]. good communication and respect between teacher and students were given special emphasis and highlighted as factors in creating positive clinical experience that can even reflect positively on the future dentists' professional attitude and level of patients' care. In the year 2000, Kilminster and Jolly [12] stated that clinical supervision is "the least investigated and developed aspect of clinical education". To date this statement still holds true with limited amount of published literature addressing clinical supervision as part of the clinical training environment. The impact of clinical teachers on dental students' clinical experience is also an area that need to be extensively studied; while there are several empirical studies on this subject, most studies only looked at supervision in isolation without addressing the impact of supervision on the supervised party [8, 13, 14]. Another observation on clinical supervision research is the lack of a standardized tool or methodology. This makes result comparing difficult except in very general terms.

Dundee Ready Education Environment Measure (DREEM) was employed in many studies to characterize the positive learning environment. Examination of the 50 questionnaire items in DREEM demonstrate that it is not the right tool to study the impact of the clinical teacher on the students due to the fact that it was primarily designed to assess the education environment as a whole[15, 16].

A study by Henzi et al. [17] used the Clinical Education Instructional Quality Questionnaire (ClinEd IQ) to assess the dental students' clinical experience. This instrument was originally named Medical Education Instructional Quality Questionnaire (MedEd IQ), and developed to assess medical students' perceptions of their clinical experience [18]. Henzi et al. [17] modified the original MedEd IQ by substituting the term "dental" for "medical" and changing the name to ClinEd IQ.

ClinEd IQ has three subscales; Clinical Learning Opportunities (fifteen items), Involvement in Specific Learning Activities (thirteen items), and Interaction with Clinical Instructors (fifteen items), it also includes two open-ended questions. Two previous studies evaluated the impact of the clinical instructor on dental and medical training in Malaysia using self-administered questionnaires[8, 19]. However, we believe the ClinED IQ better explores the students experience with the clinical instructor.

At Universiti Teknologi Mara (UiTM) academic conference in 2015, the university deputy vice chancellor addressed the clinical supervision in his speech. He highlighted that a clinical expert does not necessarily means a great or good teacher and that adequate training in teaching need to be provided to the clinicians before they are asked to

supervise students. His remarks were the motivation for this study with an objective to evaluate the impact of the clinical instructor communication on dental student's clinical training.

Materials and methods

A total of 174 undergraduate clinical dental students in Universiti Teknologi Mara (UiTM) ranging from year 3 to year 5 were included in this study. Ethical approval was obtained from the Research Ethics Committee, Faculty of Dentistry, UiTM, to conduct the study using the Clinical Education Instructional Quality Questionnaire (ClinEd IQ) [17] . The Questionnaire was distributed to the clinical dental students (years 3,4, and 5). The ClinEd IQ contains forty-three multiple choice questions and two open ended questions. The multiple-choice questions are broken into three subscales: Clinical Learning Opportunities (fifteen items), Involvement in Specific Learning Activities (thirteen items), and Interaction with Clinical Instructors (fifteen items). The ClinEd IQ was measured on a six-point Likert scale from "strongly disagree" to "strongly agree". ClinEd IQ contains two open ended question about strength and weaknesses of the dental programme. In this study our objective was to assess the impact of the clinical teacher on dental students learning experience, thus the open -ended questions were modified to gain more insight of the impact of a positive or negative feedback from the clinical teacher. In the first open ended part we asked the students to write about the possible effect of a positive or negative feedback from the clinical teacher on their clinical work. In the second part of the open- ended questions we asked the students about what they most appreciate in their interaction with the clinical instructor and what they most dislike and wish to improve. Upon distribution of the questionnaires, students were informed that their responses will be anonymous allowing them to answer the questionnaire without bias.

In this paper, only responses for the third subscale (Interaction with Clinical Instructors) and the responses to the open -ended questions were analysed.

Statistical Package for Social Sciences (SPSS) version 22.0 was used to analyze the data. The analysis consists of identifying means and standard deviations within the subscale. One-way analysis of variance (ANOVA) test was used to identify the difference among the clinical years. Thematic analysis of more than 600 responses for the open-ended questions were carried out where words and phrases in the students' responses that have similar meanings were highlighted, identified and grouped.

Results

A satisfactory response rate of 86.2% was achieved where a total of 150 out of 174 undergraduate dental students from Faculty of Dentistry, Universiti Teknologi MARA (UiTM) completed and returned the questionnaires. The participants in this study were, year 5 students (n=67), year 4 student (n=41) and year 3 student (n=42).

The distribution of the sample by the clinical years, mean scores for clinical years and the overall mean score for ClinEd IQ Interaction with Clinical Instructors subscale are presented in Table 1. Year 5 students showed the highest mean score, while year 3 students showed the lowest score. One-way ANOVA test

Subscale	Year 3 N= 42 Mean ±SD	Year 4 N= 41 Mean ±SD	Year 5 N=67 Mean ±SD	Compo-site mean for Year 3/4/5	Tukey Test		
					3/4	4/5	3/5
Interaction with Clinical Instructors	4.39± 0.72	4.53± 0.56	4.82± 0.59	4.64	NS	*	**
** P< 0.01; * P< 0.05; NS, not significant.							

Table 1. Mean score, composite mean and Tukey test for Year 3, 4, and 5

between the three groups showed a significant difference with P = 0.001. The Tukey post-hoc test showed a highly significant difference between year 5 and year 3 mean scores (P= 0.001), a significant difference between year 5 and year 4 mean scores (P= 0.0130) and no significant difference between year 3 and year 4 mean scores (P= 0.30). the six possible response items were dichotomized into “agree” and “disagree” where agree includes the responses of “mildly agree”, “agree”, and “strongly agree” and disagree includes the responses of “mildly disagree”, “disagree”, and “strongly disagree”.

The percentage of the agreement and disagreement for each of the 15 items in the Interaction with Clinical Instructors subscale of ClinEd IQ are displayed in Table 2. students provided ratings in the desired direction (some of these items were also worded negatively) for all items except “Criticized me without offering suggestions for improvements.” where 55 percent of students agreed with the statement.

The responses to the six questions in the two open-ended parts were submitted by 116 students out of 150 students resulting in more than 600 written responses. This section will first provide the themes that emerged from analysis of the responses by some literal examples. Regarding positive and negative feedback that the students reported to have received from the instructors and how it affects the clinical work and learning, two themes emerged; how it affects their emotions, and the effect on clinical work and learning.

Regarding how positive feedback from the instructors affects the student’s emotions, it was found that praising and supporting the students, be it in front of patient or peers boosts their enthusiasm to work. The comments from the students include:

“I feel very happy indeed, in fact reason for me to become better.”

“I would be motivated that makes me more enthusiastic in learning new things.”

Regarding the effect of positive feedback on their clinical work and learning, the students expressed that praise or encouragement brought confidence that boosted the quality of their work and their desire to maintain and improve their clinical work. The following are examples of the students response:

“I feel more confident in completing the

Subscale Item: Interaction with Clinical Instructors	Agree N (%)	Disagree N (%)
Established an active role for me in patient care and gave me responsibility for managing patient care that was appropriate for my level of training.	145 (96.7%)	5 (3.3%)
Failed to prepare me for patient encounters.	27 (18.0%)	123 (82.0%)
Gave me specific and practical information that helped me improve my skills.	142 (94.7%)	8 (5.3%)
Instructed me at my level of knowledge and expertise rather than at their level of knowledge.	125 (83.3%)	25 (16.7%)
Provided consistent instruction and feedback.	132 (88.0%)	18 (12.0%)
Brought to my attention techniques and strategies that I had previously not seen.	143 (95.3%)	7 (4.7%)
Made every patient encounter a positive learning experience.	140 (93.3%)	10 (6.7%)
Created an environment in which I felt comfortable accepting challenges, even at the risk of making mistakes and encouraged me to ask questions without fear of being “put down.”	117 (78.0%)	33 (22.0%)
Improved my understanding of clinical practice.	145 (96.7%)	5 (3.3%)
Discouraged me from taking risks or trying new things.	49 (32.7%)	101 (67.3%)
Did not check my work frequently and did not provide me with timely feedback when I needed it.	37 (24.7%)	113 (75.3%)
Demonstrated the value of respecting patient preferences even when they differed from my own.	138 (92.0%)	12 (8.0%)
Encouraged me to become increasingly independent over time.	141 (94.0%)	9 (6.0%)
Criticized me without offering suggestions for improvements.	82 (54.7%)	68 (45.3%)
Responded promptly to requests for consultation, assistance, feedback, or evaluation.	135 (90.0%)	15 (10.0%)

Table 2. Percentages of students’ agreements with items of ClinEd IQ subscale 3 (Interaction with Clinical Instructors)

clinical work and I can do it more efficiently."

"It actually gives me a good impact as it will give more courage to the student to maintain and improve the clinical work."

On the contrary, students felt mainly discouraged, demotivated and stressed when they receive negative feedback especially when the negative feedback is delivered in a demeaning way for example, in front of the patient or peers. Some of the comments include:

"I felt discouraged and lost interest in doing the work."

"It affects my mood instantly as my thoughts and emotions have been shaken up. It does affect my clinical work or learning where I can just stop from doing anything."

"It makes me feel down and such embarrassing moment since there is patient unless being criticized in proper way instead of harshly."

Regarding the effect of negative feedback or scolding that the students received from the instructors in front of the patient or peers, the students expressed that it affected the quality of patient's care to be delivered. Students frequently described the feeling of discontinuing work or giving up. They also mentioned that it is acceptable to give a negative feedback, but they wish to also get an answer or a solution to their clinical task. However, there were some students who took it as a challenge to improve themselves and believed that, negative feedback is part of the learning process. Following are some of the quotes:

"It somehow affects my mood and it will let me down. Most probably our clinical work will not get any better when the instructor criticizes us and did not even teach us how to improve our work."

"I will be really disappointed and ashamed, I will start to feel afraid to ask more questions and show my work after that. My mind would be somewhere else and cannot concentrate on my work."

"It will put me down and feel lack of confidence to face the patient and need to improve more and take it as challenge to do better and do not repeat the same mistakes."

In the second part of the open-ended questions, the students were asked to state what they appreciate most about their instructors. In their responses, two themes emerged; the instructors' guidance and knowledgeable instructors.

In relation to the first theme, instructors' guidance, the students appreciated how instructors would guide them in clinical work and that comments or advice from the instructors were helpful in the learning process. Students commented:

"Guiding me in almost every single step in certain procedure as well as explaining the procedure done"

"The instructor is willing to give her personal opinions and suggestions regarding my work"

As for the second theme, which is knowledgeable instructors, the students find stated that the instructors in all disciplines are very knowledgeable and that they share their knowledge undividedly and unconditionally among the students. Two of the comments received were:

"They never lack the knowledge to share with their students"

"They always know what to do when we encounter a problem or difficulty during clinical work"

Regarding questions on the students'

negative experiences or points about the instructors that they wish to be improved, the frequently described negative experiences were when the instructors criticize harshly or sarcastically in front of the patient or criticize without offering suggestions for improvements. Some students commented that they would take this as part of the learning process while some would not. Few students also expressed their dislike on sexism that some of the instructors allegedly portray during clinical supervision. The following are direct quotes from the students:

“Being scolded by the instructor in front of the patient then the patient might question our credibility as dental students.”

“Gender bias. Some female lecturers prefer male students rather than female.”

“Criticizing without offering suggestion for improvements.”

Regarding the improvements that can be made, majority of the students suggested that students should be treated equally and there should not be gender discrimination. Students also suggested that if criticism was to happen, it should be rational and professional. Following are the suggestions made:

“Don’t scold us in front of the patient. Scolding is not the entire answer in solving the problems. Criticize us in a wisely manner and in suitable place.”

“Lecturer is supposed to teach all and treat all the same regardless of their gender”

“Teach us when commenting on our work.”

Discussion

Most of the studies on dental education are conducted by instructors for instructors without much effort to study the students’ perception. This is particularly true for the Clinical aspect which is less investigated than other parts of dental education. Most universities conduct training for new lecturers which mainly focuses on teaching methodology and assessment methodology with little to no focus on how to interact with students in the clinic. The assumption that clinical experts knows how to deliver knowledge to students without training them to do so is rampant in dental faculties around the world [20, 21]. Evaluating the clinical teaching and learning process is a very important aspect of effective teaching. It helps in identifying areas of strength that need to be reinforced and areas that can be improved[13, 22].

the American Dental Education Association initiated a large project entitled the Students’ Perspective Project (SPP). The overall goal of the SPP was to identify areas of strengths and weaknesses within the dental education from the students’ perspective and provide administrators with target areas for improvement. The Clinical Education Instructional Quality Questionnaire (ClinEd IQ) is one of the tools used in the SPP [23].The learning environment of the clinic is a stage where the instructor plays many roles. The clinical teacher can be seen as role model, assessor, confidante, and facilitator for the student clinician. Positive interactions between the instructor and the student was found to increase the students efficiency in patient care delivery[1]. High-quality patient care is only possible if the dental practitioner has received high-quality teaching during both undergraduate and residential years. Therefore, it is important that dental clinical instructors be good and effective teachers[10, 18, 24].

The student’s perceptions elicited by the ClinEd IQ indicated that clinical experiences greatly influence their clinical learning. Skills, techniques, and knowledge

developed during their clinical education are heavily dependent on their interaction with the instructors who serve as their teachers, mentors, and evaluators.

In this study we aimed to address a gap in previous literature on clinical dental education where most studies aimed to evaluate the clinical supervision without addressing the impact of supervision on the supervised party (The Student) [11, 22, 25]. In our review of the available tools to assess the clinical aspect of dental education and particularly the impact of the clinical instructor on the students' clinical training we found that many studies used the Dundee Ready Education Environment Measure (DREEM). This tool has been used internationally for different purposes and is regarded as a useful tool by users. However, reporting and analysis differs between publications. This lack of uniformity makes comparison between institutions difficult [15]. In this study, we chose to use the ClinEd IQ as the tool of our survey since it includes a fifteen-item subscale to assess the impact of the clinical teacher. Moreover, the open-ended questions provide a more meaningful insight on the impact of the clinical instructor feedback on the students' learning experience. In this study the Mean score for ClinEd IQ Interaction with Clinical Instructors subscale was highest in year 5 students, while year 3 students showed the lowest score. This is in agreement with the findings of another study that also found the score to be higher in more senior students [17]. In the context of the students' interaction with clinical instructors, in this study, more than ninety percent agreed that the instructors provided a positive learning experience, and that they improved the students' understanding of clinical practice by giving specific and practical information besides providing consistent feedback (88%). Students also mentioned that having a positive learning experience would improve their level of confidence (78%) and quality of work (96.7%). Conversely, more than half of the students agreed to the item

"Criticized me without offering suggestions for improvements" (54.7%), which they also commonly mentioned in the written comments (Table 2).

The ClinEd IQ was the research tool in a study by Henzi et al. [17] which included 21 Dental schools in North America. The percentage of agreement and disagreement in the subscale of interaction with clinical instructors were comparable with our study in most of this subscale items.

However, in some items the difference was remarkable. Regarding the item of "Provided consistent instruction and feedback", 47% disagreed with this statement in the Henzi et al. [17] study, while in our study only 12% disagreed. Furthermore, the item "Made every patient encounter a positive learning experience" in Henzi et al. [17] had 28% disagreement, while in our study only 6.7% disagreed. The other major difference between the two studies can be seen in the item of "Criticized me without offering suggestions for improvements", for Henzi et al. [17] 27% agreed , while in our study (54.7%) agreed. In our opinion this high percentage requires further studying and evaluation.

In the written comments, the students mentioned that some of the instructors have high expectations above the students' ability while some would understand their level of knowledge. This is also reflected in the item of "Instructed me at my level of knowledge and expertise rather than at their level of knowledge", for which (16.7%) disagreed.

Based on the analysis of the written responses, it was understood that the students would appreciate if the instructors would give them suggestions for improvement rather than being scolded and left confused. The students also mentioned that they frequently receive feedback in a sarcastic manner. However, there are some students who take this harsh criticism as a learning process and would improve in future encounters. This positive attitude towards adverse and negative experiences was observed in one quarter of a sample of 1300 medical students in

New Zealand, while one sixth mentioned that adverse experiences made them consider leaving medical school [5]. Just as previous studies suggested, the responses from the students indicated that the effective ways of delivering knowledge is by creating an environment that is free from stressful surroundings and activities especially in the clinical setting. On the other hand, harsh criticism (as perceived by the students) especially in front of the patient, would not only demotivate the students to continue their work but will also demolish the rapport built with their patients. Students would be able to accept negative feedbacks if suggestions or professional opinions were given afterwards. Gender discrimination was mentioned in the written comments for which the students suggested that the instructors would treat all students equally and professionally regardless of their gender. The issue of gender discrimination was highlighted in a study on dental students in faculty of dentistry University of Minnesota[26], where Discrimination based on gender was reported by 16 percent of the 400-study sample.

Implications for Clinical Education and Faculty Development

Although The influence of the educational environment on the students learning experiences became increasingly available in the past two decades, only in 2013 the accreditation body for dental schools in the united states, The Commission on Dental Accreditation, (CODA) started to require dental education programs to commit to a “humanistic culture and learning environment” and evaluate that environment regularly. Respect is essential among dental students, patients, faculty, staff, and administration. Dental students are the future of the profession, if students are harassed or humiliated, future dentists will not be expected to build healthy respectful relations with their patients, and their communities [26]. In regards to the implications of previous studies, one study asked this question: “what happens to all the data collected through surveys of students opinions on their education? ” and concluded that, dental schools tend to focus on passing rates rather than students’ perceptions of their education [27]. Another study concluded that most deans, directors, and chiefs do not want to look for unprofessional behavior in their colleagues [28]. In 2014, a study on mistreatment of medical school students in the United States reached the alarming conclusion that most deans chose to ignore those behaviors as it is easier to remain unaware of unethical behavior than to be aware of it and forced to deal with it [29]. In previous literature, the authors could only find two studies where the faculty dean chose to address mistreatment of students by faculty staff [30, 31].

Readers of this article may wonder about

the fate of the current study. When results of this study came to the attention of the dean of faculty, he advised the authors to conduct a sharing session where the findings were conveyed to all the academic staff, The dean himself conducted the session and encouraged further discussions and studies to draw an outline of conduct for clinical teachers during supervision. The dean also encouraged the researchers to publish the study to give the opportunity for all faculty staff to reflect on and discuss the results. The authors wish to acknowledge the leadership of our faculty dean in addressing this difficult issue as previous research shows that most deans choose to look the other way.

Conclusions

Good communication skills between clinical dental students and their respective instructors is one way to improve the quality of dental healthcare, as it leads to the improvement of students' confidence, clinical environment, and increases patients' satisfaction. Findings from this study demonstrated that, students generally viewed their clinical education as being a positive experience with their instructors. Four areas of concern were highlighted: students feel discouraged, demotivated, and stressed when they receive harsh negative feedback, the quality of dental care delivered can be affected when being reprimanded in front of peers, instructors sometimes reprimand without offering suggestions for improvement, and that there seem to be a gender discrimination portrayed during supervision. The impact of the clinical instructors on the students' clinical education in this faculty was generally positive. There is room for improvements especially regarding the areas of concern.

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