Assessment of the educational environment in a newly established dental college

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Objectives: This study was aimed to assess quantitatively and qualitatively the students' perceptions of teaching environment in a newly established dental school. Materials and Methods: A modified DREEM questionnaire was introduced to all the dental students of first and second year dentistry. Quantitative descriptive questions and open-ended questions were added to the questionnaire on the reasons why students joined the dental course and their perception of it as well as positive and negative aspects within the college. Results: Out of total thirty four students (97%) returned the completed questionnaire. The overall mean score was 101.39 indicating "more positive than negative environment". Scores in 4 out of the 5 domains were significantly higher in 1 [sup]st year students compared to 2 [sup]nd year students. Most of students had good social life. Students were not satisfied with the support system in the college. 73.5% of students chose the course themselves and 47.1% found the course tough while 32.4% found it interesting. Conclusions: It is important to assess the students' perceptions of educational environment in their first dental years especially in newly established colleges. Special attention should be paid to transition of students from first to second year. It would be interesting to monitor the perception of the same students over years.

Introduction

The role of teaching environment has gained a lot of interest in the recent years as a major factor that influences the teaching outcome in medical sciences. [sup][1],[2] Students' opinion and perception of the quality of their teaching environment is now recognized as valid indicators of the appropriateness of curricula and educational settings. [sup][3] For the assessment of this environment, Dundee Ready Education Environment Measure (DREEM) was introduced in 1997 [sup][4] and since then, it was used worldwide in its original [sup][5],[6],[7],[8] or modified versions. [sup][3],[9],[10],[11] These studies were conducted mostly in medical colleges but in dental colleges were very rare. [sup][12]

Most of the studies generally focused on assessing the educational environment at certain time points and did not report the cumulative experience of students over years and evaluate the pattern of change in their perception of learning environment as they progress in their study. Moreover, studies have not assessed the students' perception in newly established institutions which are more likely to have small numbers of students in the first years and having experience difficulties.

Taibah University (TU) in Saudi Arabia was established in 2004 and its dental college was established in 2007. The college endeavors to implement the best educational and quality strategies to graduate dentists of high standards. Therefore, there is a great interest in improving the quality of teaching within the university in general and within the college in particular, being a newly established college.

The aims of the current study were to:
*Quantitatively assess the students' perceptions of the quality of teaching environment in a newly established dental school in Taibah University, Saudi Arabia. *Qualitatively assess students' perceptions using open-ended questions.

Materials and Methods

Dental college at the time of the study had 18 male students in the first year and similar number in the second year. Female students were not yet admitted to the dental program. TU's dental students attend the university for one preparatory year before they join the dental program. This means that the first year dental students in fact second year university students which make it reasonable to include them in this study.

The Dundee Ready Educational Environment Measure (DREEM) was originally introduced to measure the students' perception about the educational environment. This questionnaire was modified to suit the current students' status in TU who were not yet in the clinical stage of their study, so questions number 6 and 11 ( the teachers are patient with patients and the atmosphere is relaxed during the ward teaching, respectively ) were excluded. Moreover, questions regarding the social life were modified or eliminated because the social life of students in Saudi Arabia differs from that in other countries and there is no university accommodation. These are questions number 28 and 46 ( I seldom feel lonely and my accommodation is pleasant, respectively ).

The modified version of the questionnaire was introduced to all students in the first and second years in College of Dentistry in Taibah University, Saudi Arabia at the end of the first semester. There were no senior students at the time of conducting the study. The study objectives were explained to the students before they started completing the questionnaire.

The modified version of the questionnaire consisted of 44 items which were divided into 5 domains:

*Students' perception of learning (SPL) - 12 questions. *Students' perception of teachers (SPT) - 10 questions. *Students' academic self-perception (SAP) - 8 questions. *Students' perception of atmosphere (SPA) - 11 questions. *Students' social self-perception (SSP) - 5 questions.

Two sets of questions were added to the questionnaire.

*The first set was a quantitative general descriptive questions: *Reasons you joined the dental college *How do you perceive the dental program in general *The second set was an open-ended questions and consisted of three statements: *Positive things within the college you suggest to maintain *Negative things within the college you suggest to change *Other suggestions

Data analysis was undertaken using SPSS v.15. Responses to nine negative questions (4, 8, 9, 17, 25, 35, 39, 48 and 50) were reversed before data analysis.

Mean scores were calculated for each year and for each domain of questions within the same year and across the two years. Students' responses were scored as 0, 1, 2, 3 and 4 indicating strongly disagree, disagree, not sure, agree and strongly agree, respectively. Responses to open-ended questions were carefully evaluated and responses correlated to the quantitative results.

Scores were interpreted according to the following criteria:

*For interpretation of the overall scores:

0-50: Very poor
51-100: Plenty of problems
101-150: More positive than negative
151-200: Excellent

*For the interpretation of subscales:
As a modified version of DREEM questionnaire was used in this study, our maximum score was 184 compared to the score of 200 in the original questionnaire. Therefore, statistical advice was sought and the following formula was suggested to transform the results in the present study into a scale comparable to the original scale:

\[ Y = \text{Mean Y} + \left( \frac{\text{range Y}}{\text{range X}} \right)F_{\text{N}x01}(X - \text{Mean X}) \]

Where,

*Y*: the requested value to be calculated
*Mean Y*: the mean range for reference values (original DREEM values 0-200) = 100
*Mean X*: the mean range for the given values (obtained value from the present study 0-184) = 92
*Range*: the result of subtraction of the lower value of the reference range from the highest value of the same range (200-0 = 200).

Results

The overall students reply rate was 97% (n = 34). This rate was 94.4% (n = 17) for the second year students and 100% (n = 17) for the first year students. Reliability test of the questionnaire (Chronbach's alpha coefficient) was 0.905.
The results of the present study showed that the scores of 1st year students were higher than scores of 2nd year students and the difference was statistically significant in 4 out of the 5 domains [Table 1] and [Table 2].

The modified version of DREEM overall mean score was 101.39 and for the 1st and 2nd year students, it was 112.84 and 89.05, respectively [Table 2].

As shown in Appendix 1, most of the scores for individual questions were between 1 and 3. Two questions had mean response values of > 3 which were:

* "I have good friends in this college" (mean [+ or -] SD = 3.06 [+ or -] 1.043) * "My social life is good" (mean [+ or -] SD = 3.15 [+ or -] .784)

One question had a mean response of < 1 which was:

*"There is good support system for students who get stressed" (mean [+ or -] SD = 0.76 [+ or -] .855).

Students' perceptions for joining the dentistry course and their impression about it

Different reasons for joining the dental course as reported by the students and their impression about the course are shown in [Table 3] and [Table 4], respectively.

The open ended questions

A few points were raised by the students through their feedback as follows:

o Positive things regarding the educational process suggest to keep:

o They appreciate the effort done by some of the teachers

o The open channel between them and the dean of the college

o The way teachers link the educational material to dental practice

o Negative things regarding the educational process suggest changing:

o The daily studying load given to them in the course is heavy

o The examination and assessment style is very difficult

o Other suggestions

o Changing the distribution of the credit hours as some courses (such as anatomy) carries a high weight and the course is too long

o Improving the effectiveness of the role of academic advisors to students in order to prepare them for the new academic and clinical life.

Discussion

According to the above grading system, the overall DREEM score (101.39) indicated a "more positive than negative environment". However, it has to be noted that this value is barely above the value of 100 which indicates plenty of problems. This result reflected the more negative responses by the second year students (89.05) as compared to the more positive responses of the first year students (112.84). These scores are very close to many other studies who reported students' perception in the first year in medical and dental schools. 

A more careful evaluation of the results showed that SPT, SAP and SSP were judged as reflecting good environment while SPL and SPA indicated the presence of many problems which need to be acted upon by the college.

Two items in the whole questionnaire carried mean response values more than 3. These items were "I have good friends in this college" ; "My social life is good". This reflects the fact that students were satisfied with their social life in the college as measured by this questionnaire. The mean value of SSP was 41.21 despite the fact that the lowest mean value in the whole questionnaire (0.76 [+ or -] .855) was recorded to a question in the same domain of questions.
"There is good support system for students who get stressed". This low value affected the overall mean value of the SSP domain, which contained only five items. This reflects the need for an efficient support system to students. This need for a support system was reported by other studies. [sup][9],[13]

Responses of first year students reflected better perception of educational environment when compared to those of second year student. The difference was statistically significant (p<0.05) for all domains, except for SPA. Although both groups of students were in the pre-clinical stage, when first year students move to the second year, they start to have more dental study load, dental laboratory sessions and phantom head lab. This may indicate that there is a need for good preparation of first year student before they start their second year and help them manage their time in a better way.

Our results agree with other studies that showed that first year students expressed better perception of educational environment compared to senior students. [sup][5],[12] However, other studies did not agree with that [sup][14] and one study reported that first year students were more satisfied with the overall learning environment compared to fifth year students but less satisfied than third year students. [sup][14]

The quantitative and qualitative questions

It is interesting to note that most of the students were able to describe the course and express their impression about it in a single response (91% and 85%). Most students chose the dental course themselves and were clear about the choice. It is well known that dentistry is not an easy course and it is expected that students find it tough (47.1%) in spite of being found interesting as well by almost one third of the students (32.4%).

Students’ feedback to open-ended questions showed clearly the openness of the college administration and warm atmosphere provided by the teaching staff. Although there was a marked deficiency in effective support system, students found a kind of alternative that still needs to be strengthened. It is interesting to note that students in their pre-clinical years do appreciate the link between the theoretical part of their study and their future clinical practice.

Not unexpectedly, students find the study load more than they have been used to previously. Medical and dental education worldwide requires studying larger material and it is crucial to help students accommodate with this rather than reducing the study material. Students’ responses in all parts of the study clearly point the need for a support system which seems an international need by students. [sup][9],[13]

Conclusions

This study suggested that students’ perception in their first dental years can be assessed using DREEM questionnaire. This is of paramount importance as modifications to the teaching environment in new institutions would be easier than that in the already established ones. This study suggests also that special attention should be paid to students during their transition from first to second year to prepare them to the next year and explain to them the goals and requirements of this year. We feel that introductory sessions to orientate students and help them move to second year in comfort and ease are necessary at the end of first year and before the beginning of the second year. It would be interesting to follow up and measure the perception of the same students as they progress in their study within the college over years and to check how effective are the efforts done by the college to improve the educational environment.

References


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