STUDENTS' SELF-ASSESSMENT IN PRECLINICAL AND CLINICAL EDUCATION OF PROSTHETIC DENTISTRY

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ABSTRACT

Background: The ability to self-assess is a critical skill that all health professionals must be able to do, in order to achieve competence. This is essential for the doctors of dental medicine. During their education and practice they apply different clinical and paraclinical procedures.

The aim is to evaluate the students' self-assessment skills during the education of clinic and pre clinic of prosthetic dentistry.

Material and methods: After the completion of certain work - preparation for full veneer crown, a questionnaire was provided to each student in preclinical course (n=30) and clinical course (n=30) for self-evaluation. The questionnaire involved: axial reduction, occlusal reduction, facial and lingual reduction, smoothing and finishing. The answers were based on the standard for the university grading scale. Than, the same questionnaire was fulfilled by the assistant professor without seeing students' self-evaluation.

Results and Discussion: Results have been reported in percentages. 100% respond rate has been achieved. The students from the preclinical course tend to overestimate their performance (50%). The students from the clinical course tend to submit overall lower grades than the faculty evaluation (25%).

Conclusions: The students from clinics have better self-assessment skills. The discrepancy was most pronounced in the junior students. The different evaluations (self-assessment and assistant professor's) help students to improve their understanding of certain principles and improve the teaching effectiveness of education of prosthetic dentistry.

Key words: students' self-assessment, clinical teacher evaluation

Ability to evaluate one self accurately is also one of the learning objectives of a competency based education. The ability to self-assess is a critical skill that all health professionals must be able to do, in order to achieve competence. This is essential for the doctors of dental medicine. During their education and practice they apply different clinical and paraclinical procedures. They should be able to assess correctly the procedures they made in order to define their needs of future education. The most of the students of dental medicine significantly emphasizes on the achievement of technical skills, especially in the beginning of their education.

According to several authors [1, 2, 3, 4] high percent of medical and dental students' self-assessment is not correct.

The reason is that they assess themselves according the efforts involved not involving the quality criteria of the final result.

The reasons for discrepancies in self-assessment and teachers' assessment could not understanding the material, self-deception, lack of clear criteria assessment of efforts involved and not the clinical performance [5, 6, 7, 8, 9].

Some authors [10, 11, 12, 13] search for correlation between wrong self-assessment and their grades, the year of education, demographic records, eks.

According Mattheos et al. [14] it is exceptionally important that dental students understand that self-assessment has an important role to determine the their needs for education and to understand the level of knowledge of the criteria for clinical performance. The process of education could be significantly improved through self-assessment of dental students [15, 16].

Some authors do not find difference in consistency of the students' and teachers' grades [17]. Mattheos et al. [14] determine significant difference in level of agreement among the grades.

The goal of this survey is to evaluate the students' self-assessment skills during the education of clinic and preclinic of prosthetic dentistry and to compare with teacher's assessment.

MATERIAL AND METHODS

In this survey participated 30 third-year students from pre-clinical course and 30 students from clinical course (27 men, 33 women; mean age 23 years).

After completing their preparations, students were asked to evaluate themselves according to the standard for the university grading scale on the checklist. Than, the same questionnaire was fulfilled by the assistant professor without seeing students' self-evaluation. Evaluations of each crown preparation were carried out by a single instructor.

Data analysis. Data entry and analysis was carried out with the help of SPSS 19. A Paired samples t-test was carried out to see if the difference between self- and instructor evaluations were statistically significant for each item

at a confidence interval of 95%.

RESULTS AND DISCUSSION

The results of self-assessment of the students of pre-clinical course of their education are presented in table 1. The analysis of the results demonstrate that there is no significant difference (p>0.05) between students' self-assessment and teacher's assessment for two from all forth criteria for tooth preparation for complete crown. These criteria were occlusal reduction and smoothing and finishing of the prepared tooth. For the remain two criteria for evaluation (proximal and buccal and lingual reduction) was found significant difference (p<0.05). The students' grades were higher than the grade from the assistant professor.

Table 1. Comparison between students' and staff ratings of performance on tooth preparation for full crown in preclinical course.

Assessment / Evaluation criteria	95% Confidence Interval				
	Mean	SD	t	df	Sig.
proximal reduction	4.77	0.57	2.62	58	0.011
occlusal reduction	4.80	0.66	1.00	58	0.317
buccal and lingual reduction	4.90	0.61	2.09	58	0.041
smoothing and finishing	4.87	0.57	1.38	58	0.171

The results of assessment and self-assessment of students from clinical course are presented in table 2. The analysis of the result presents significant (p<0.05) difference according one of the established criteria - buccal and lingual reduction.

Table 2. Comparison between students' and staff ratings of performance on tooth preparation for full crown in clinical course.

Assessment / Evaluation criteria	95% Confidence Interval				
	Mean	SD	t	df	Sig.
proximal reduction	4.87	0.57	1.82	58	0.073
occlusal reduction	4.83	0.59	1.87	58	0.065
facial and lingual reduction	4.80	0.55	2.30	58	0.025
smoothing and finishing	4.83	0.53	1.51	58	0.134

The students from the clinical course determined a lower grade then the teacher's grade. For the rest criteria – proximal reduction, occlusal reduction and smoothing and finishing there were no significant difference (p<0.05) between student's and teacher's grades.

The results of the survey give us a reason for conclusion that the students from the clinical course tend to underestimate their clinical skills. In opposite, the students from preclinical course tend to overestimate their skills.

Dental preclinical procedures are difficult for beginning dental students. However, this is true for not only performing the task, but also for perceptually understanding the task at hand. This could explain the large mean difference comparatively between the student self-evaluation and in-structor mark.

Students become more responsible especially for irreversible procedures in clinical classes. They need more practice to feel secure to provide fixed partial dentures for their patients.

Conclusions

The students from clinics have better self-assessment skills. The discrepancy was most pronounced in the junior students. The different evaluations (self-assessment and assistant professor's) help students to improve their understanding of certain principles and improve the teaching effectiveness of education of prosthetic dentistry.

REFERENCES:

1. Alia A, Jalil S, Sikander M. Accuracy of self-evaluation of crown preparations by second-year pre-clinical students. *Pakistan Oral & Dental Journal*. 2012 Aug;32(2):319-22.

2. Cho CC, Chee WW, Tan DT. Dental students' ability to evaluate themselves in fixed prosthodontics. *J Dent Educ*. 2010 Nov;74(11):1237-42. [PubMed]

3. Gordon MJ. A review of the validity and accuracy of self-assessments in health professions training. *Acad Med*. 1991 Dec;66(12): 762-9. [PubMed]

4. Tada A, Hanada N. Sexual differences in oral health behavior and factors associated with oral health behavior in Japanese young adults. *Public Health*. 2004 Mar;118(2):104–9. [PubMed] [CrossRef]

5. Bryan RE, Krych AJ, Carmichael SW, Viggiano TR, Pawlina W. Assessing professionalism in early medical education: experience with peer evaluation and self-evaluation in the gross anatomy course. *Ann Acad Med Singapore*. 2005 Sep;34(8):486–91. [PubMed]

6. Edwards RK, Kellner KR, Sistrom CL, Magyari EJ. Medical student self-assessment of performance on an obstetrics and gynecology clerkship. *Am J Obstet Gynecol*. 2003 Apr; 188(4):1078–82. [PubMed] [CossRef]

7. Minter RM, Gruppen LD, Napolitano KS, Gauger PG. Gender differences in the self-assessment of surgical residents. *Am J Surg*. 2005 Jun;189(6):647–50. [PubMed] [CrossRef]

8. Rudy DW, Fejfar MC, Griffith CH, Wilson JF. Self- and peer assessment in a first-year communication and interviewing course. *Eval Health Prof*. 2001 Dec; 24(4):436–45. [PubMed] [CrossRef]

9. Taylor CL, Satterthwaite JD. Assessing the clinical skills of dental students: a review of the literature. *Journal of Education and Learning*. 2013: 2(1):20-31. [CrossRef]

10. Peker I, Alkurt MT. Oral health attitudes and behavior among a group of Turkish dental student. *Eur J Dent*. 2009 Jan;3(1):24–31. [PubMed]

11. Rong WS, Wang WJ, Yip HK. Attitudes of dental and medical students in their first and final years of undergraduate study to oral health behaviour. *Eur J Dent Educ*. 2009 Aug; 10(3):178-84. [PubMed] [CrossRef]

12. Spence LR, Fasser CE, McLaughlin RJ, Holcomb JD. Self-assessment of cancer competencies and physician assistant cancer education: instrument development and baseline testing. *J Physician Assist Educ*. 2010; 21(3):4-12. [PubMed]

13. Woolliscroft JO, TenHaken J, Smith J, Calhoun JG. Medical students' clinical self-assessments: comparisons with external measures of performance and the students' self-assessments of overall performance and effort. *Acad Med*. 1993 Apr; 68(4): 285-94. [PubMed]

14. Mattheos N, Nattestad A, Falk-Nilsson E, Attstrom R. The interactive examination: assessing students' self-assessment ability. *Med Educ*.2004 Apr; 38(4): 378–89. [PubMed] [CrossRef]

15. Abdullah D, Shalini K, Wan Noorina W, Jasmina QZ, Safura B, Nabishah M. Dental students' perceptions on the value of self-assessment skill. *Procedia - Social and Behavioral Sciences*. 2011; 18:122–7. [CrossRef]

16. Redwood C, Winning T, Lekkas D, Townsend G. Improving clinical assessment: evaluating students' ability to identify and apply clinical criteria. *Eur J Dent Educ*. 2010 Aug;14(3): 136–44. [PubMed] [CrossRef]

17. Satterthwaite JD, Grey NJ. Peer-group assessment of pre-clinical operative skills in restorative dentistry and comparison with experienced assessors. *Eur J Dent Educ*, 2008 May; 12(2):99–102. [PubMed] [CrossRef]

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