

Evaluation of a Dentistry course based on the National Curricular Guidelines: a sectional study

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ABSTRACT

The study had the purpose of evaluating, from the point of view of teachers and students, an undergraduate course in Dentistry, based on the National Curriculum Guidelines (NCG). This is an observational and cross-sectional study, with exploratory, descriptive and evaluative methodology. The approach used was quantitative, through the application of an online survey, by means of an instrument with validated criteria. The sample of teachers and students was a census.

The “Teaching-service Integration” dimension obtained the best relative performance among those evaluated by both students and professors. Most students considered the course adequate to the NCG (50.2%), while most professors considered it partially adequate (56.36%). Students showed themselves to be more satisfied with the training offered in the course, assigning higher average ratings for all dimensions and subdimensions. Regarding the “Graduate Profile”, professors and students gave the worst performance to the subdimension "Autonomous"; the best performance was attributed to the subdimensions "Generalist" and "Able to Understand the Social Reality". In the dimension "Healthcare Orientation", both teachers and students evaluated the best results in the subdimension "Dental Treatment", while the worst results were attributed to the subdimensions "Multiprofessionalism" and "Epidemiological Approach". In the "Pedagogical Approach" dimension, the best performance was attributed to the subdimensions "Professor's Role" and "Teaching-research-extension Articulation", and the worst performance was attributed by professors and students to the subdimension "Curricular Flexibility". The “Teaching-service Integration” dimension and related subdimensions were well assessed by both professors and students. The main weaknesses found are related to dimensions that address the professional/patient relationships and the relationships between the dental surgeon and the healthcare team during professional qualification. It is necessary to develop strategies for the reorientation of training focused on new methodological concepts of teaching and learning for the implementation of the NCG in the evaluated Dentistry course.

Descriptors: Education, Dental. Competency-Based Education. Health Human Resource Training. Curriculum.

1 INTRODUCTION

Higher education is facing major changes resulting from a globalized world. Among these are the new ways of interaction between universities and society, the increase in the number of openings and the implementation of inclusion policies and access to higher education. In the case of healthcare courses, there is an emerging need for the formation of a new graduate profile, which must consider the necessity of aligning with the local reality, according to the epidemiological profile of the population, the complex relationships among healthcare professionals and between them and society¹.

Professional training is a topic under discussion currently due to the changes brought about by the enactment of the 1988 Federal Constitution and the proposal of the Unified Health System (Sistema Único de Saúde [SUS]) to consider the health demands of the population, the social determinants of health, and the complexity of health work².

Among the challenges faced by training institutions and health service providers is the insertion of the professional training process in the context of health services. This insertion must occur within a critical, reflective, supportive, collaborative and constructive perspective, in order to consider the transformations in the teaching-learning process, in the assistance and healthcare¹.

Historically, Dentistry practice has been developed in a privatized context, with fragmentation of subjects and teaching centered on the specialist teacher. Efforts have been made since the health reform to implement the Unified Health System and to rearrange the healthcare delivery model at all levels of care. The inclusion of the dental surgeon in primary care and the National Oral Health Policy ("Smiling Brazil") represent substantial advances in the

reorientation of oral healthcare in the country. Despite this, professional training still needs to be transformed, as it continues to be guided by the old biomedical model³.

The National Curriculum Guidelines (NCG) for the Dentistry course were established by the Chamber of Higher Education of the National Education Council and represent an effort to overcome gaps in higher education in Dentistry. The NCG were formulated and proposed by professional groups created in the 2000s and replaced the former minimum curriculum, implemented in 1982¹.

The professional profile recommended by the NCG is in itself a challenge for its practice: profile of the graduate in generalist, humanistic, critical and reflective Dentistry, to work at all levels of healthcare, based on technical and scientific rigor. This brought to dental practice concepts about social and human sciences in health and the need to focus the professional practice according to the health needs of the population, both individually and collectively⁴.

However, after 15 years of its establishment, difficulties in the implementation of NCG are still observable. Among these, we highlight the lack of proper understanding of the NCG by a great number of directors, coordinators, professors, and students of dental courses in Brazil, which delays its direct implementation in courses and hinders attempts to review the curricular structures of educational institutions and the development of courses for the education of a professional compatible with the reality of the social demands of the country⁵. The perception of such aspects and the possibility of solving them is only possible through evaluative processes.

The evaluation processes were reconsidered after the Law of Directives and Bases of 1996. In 2003, the Ministry of Education proposed the National System for

Evaluation of Higher Education (NSEHE). And since then, Dentistry courses and higher education institutions (HEI) in Brazil are periodically evaluated. Thus, the culture of evaluation has been progressively incorporated and matured in the management of HEIs, although the need for greater understanding, development and validation of assessment instruments that consider the various agents and scenarios involved in professional training is perceived.

The institutional evaluation of undergraduate health courses aims to understand how these courses justify their existence, what they propose, how they are structured, what processes they develop, which results they seek and how effectively they achieve them. In this sense, the systematic, integral, and ethically conducted evaluation can offer subsidies that encourage discussions, analysis, and evidence of weaknesses and strengths in the execution of activities. And that, in turn, requires revisiting the planning and institutional goals, realigning strategies, and strengthening the institutional culture of evaluation, in order to achieve the objectives proposed in the structuring of such courses⁶.

Based on a qualitative research approach, the Dentistry curriculum of an HEI in southern Brazil was evaluated. It was observed that changes in the curriculum take place in a process, requiring time for such changes to be implemented and for the organization of the work process. This process must be based on institutional support and directed by an effective work team. It was also verified that there are strains between the planned theory and the perceived reality, which can be used to identify gaps, as well as to direct the efforts to be made in order to reach the goals initially intended⁷.

Another research study, also conducted in Southern Brazil, evaluated the change in the

Dentistry curriculum based on a qualitative approach involving students. It was observed the valuing of content and technical practices of dental care, as well as the recognition of the SUS as an important learning scenario for students. The study shows the need for the establishment of continuous and participatory evaluation processes and appropriation by the body of professors and students of the delineated curriculum, aiming at its effective implementation⁸.

The present study aimed to evaluate, from the perspective of professors and students, an undergraduate course in Dentistry, using the instrument developed and validated by Pessoa and Noro (2015)⁹, verifying the evaluation of professors and students about the aspects concerning the NCG in the professional education in the course, as well as identifying the strengthening and hindering factors for the implementation and development of the NCG in the mentioned course.

After more than a decade of implementation of a Pedagogical Course Project (PCP) based on the recommendations of the NCG, the Dentistry course, the scenario of this research, is currently undergoing a process of curricular restructuring. There is a need for evaluation in order to understand the progress achieved, the challenges that remain in the implementation of the NCG in the course, and so that the training processes can be redesigned in favor of the development of a professional graduate compatible with the profile required for the new demands of the work in healthcare.

2 METHODOLOGY

This is a sectional, observational, cross-sectional study with exploratory, descriptive and evaluation methodology.

The Dentistry course, the research setting, was founded 65 years ago, and the current curriculum was proposed in 2002, with 4.500

hours, to be accomplished in five years. A total of 96 professors from five departments from 3 teaching centers of the HEI, based in the northeast of Brazil, participated.

A census was conducted, with application of a questionnaire to professors and students of the Dentistry course. Data collection was carried out between February and June of 2016. In order to avoid selection bias, formal invitations to participate in the study were sent to 96 professors and 307 students, through in-person contact and via e-mail, on a weekly basis during the data collection time period. For the contact with the students, we used the space of regular disciplines of mandatory components in all semesters of the course. Contact with professors was individual, when confirmation of the receipt of the questionnaire and its fulfillment was requested.

In order to avoid information bias, the data obtained did not contain any identification of the participants. There was no data loss, because the questionnaire configuration prevented incomplete information from being filled out.

The inclusion criteria for professors consisted of being active in the course, and for students, of being properly enrolled. Students on leave for any reason (illness, student mobility or others), with suspended registration or who had dropped out of the course were excluded. Professors on leave or on absence for any reason were also excluded.

The questionnaire was applied virtually, with resources from the free Google Drive file storage and synchronization service, which currently stores the Google Forms application package. The questionnaire applied was the instrument validated by Pessoa and Noro (2015)⁹. A pilot test was conducted and the suitability of the instrument for the population of the study was verified.

The instrument presents dimensions, subdimensions and defining criteria for the evaluation of Dentistry courses based on the NCG.

It consists of the evaluation of four dimensions, namely: Graduate Profile, Healthcare orientation, Teaching-service Integration, and Pedagogical Approach.

Each dimension evaluated is divided into subdimensions, and scores from 1 to 10 were requested according to the perception of the participants for each subdimension. Additionally, a series of questions were prepared for the characterization of the study participants.

For the analysis, the data obtained were transferred to a database using the free statistical package GNU PSPP Statistical Analysis Software, version 0.6.2., in which a checking, cleaning, and coding process was performed.

The characterization data of the subjects were submitted to descriptive analysis. To evaluate the dimensions and subdimensions of the survey, the weights and scores prescribed in the validation of the instrument were adopted⁹. For the subdimensions, the values assigned to each of the criteria were used as collected from the questionnaires, ranging from 1 to 10, assigning maximum, minimum, mean, median, and standard deviation values.

For the evaluation of the four dimensions of the instrument, the values assigned for each subdimension were calculated in reference to the maximum scores defined for each criteria during validation⁷ and then summed, defining the score for each dimension.

To calculate the overall course evaluation, the score obtained in each dimension was divided by the respective number of subdimensions and the values were then added up, defining the final course score.

For the evaluation of the four dimensions and the overall course evaluation, the mean and standard deviation were calculated, and the relative performance was calculated based on the maximum expected score defined in the instrument's validation. For each dimension

separately, as well as for the overall course evaluation composed of all dimensions, the final score obtained was referred to the maximum possible value, which corresponds to the maximum degree of proximity to the goal-image recommended¹⁰ for Dentistry educational formation in the NCG. The relative performance

was calculated by means of the maximum expected score for each dimension and for the overall assessment of the course. The dimensions, subdimensions and respective maximum scores for the calculation of the respective performance and overall assessment of the course are presented in table 1.

Table 1. Maximum scores for each criteria, dimension and weight of each dimension in the evaluation of Dentistry courses

Dimension	Subdimension	Weights	Maximum score of the dimension	Maximum score of the dimension for overall assessment
Graduate Profile	Generalist	10	46	9,2
	Humanist	10		
	Autonomous	9		
	Critical/reflective	8		
	Able to Understand the Social Reality	9		
Healthcare Orientation	Epidemiological approach	9	51	8,5
	Healthcare Promotion	10		
	Diagnosis	8		
	Dental treatment	8		
	Oral Health Team	8		
	Multiprofessionality	8		
Teaching-service Integration	Internship Activities	10	19	9,5
	Experiences Within the SUS	9		
Pedagogical Approach	Active Methodologies	10	80	10
	Professor's Role	10		
	Faculty Development	10		
	Learning Scenarios	10		
	Integrated Curriculum	10		
	Processual Assessment of Student Learning	10		
	Curricular flexibility	10		
	Teaching-research-extension	10		
	Articulation	10		
Overall course evaluation		-	-	37,02

Source: Pessoa e Noro, 2015⁹

The research project was approved by the Ethics Committee of the HEI where the study was conducted, following all the guidelines of Resolution 466/2012 of the National Health Council/Ministry of Health, with Certificate of Submission for Ethical Appreciation (CAAE) number 45883815.3.0000.5188.

3 RESULTS

Fifty-eight professors who work in the Dentistry course replied (60.4% response rate). Among these, 3 professors refused to participate. Considering the professors who answered the online questionnaire (n=55), it was observed that most of them (56.4%) were female, aged over 50 years (40%), with 11 to 20 years of academic training, 30.9% with 11 to 20 years of teaching experience, and 90.9% had a Ph.D. degree (table 1).

Regarding the students, 201 of the 307 properly enrolled in the time frame of data collection responded to the request (response rate of 65.5%). It is emphasized that part of the students (n=21, 6.84%) met the exclusion criteria of the study.

Most students were female (61.7%), with participation of students from all semesters. Most students reported that the Dentistry course is their first experience in an undergraduate course (83.6%), according to table 2. As for the intention of entering the job market, the highest frequency was attributed to working with the Family Health Strategy (31.3%), as a second option, own private practice (26.9%), and the third option was related to teaching and lecturing (15.9%).

Table 3 presents the mean scores, standard deviation, and relative performance for the dimensions and for the overall course

evaluation, considering the maximum scores that could be achieved for each dimension and for the overall course evaluation.

In general, students evaluated most subdimensions with higher averages, with the exception of "Active Methodologies" and "Processual Assessment of Student Learning", although without statistical significance. The only exception was the subdimension "Professor's Role", better evaluated by professors, with a significant difference in averages in relation to the students' evaluation in this subdimension.

Considering the performance of the "Graduate Profile" dimension, there was a statistically significant difference between the averages attributed by professors and students for the subdimension "Able to Understand the Social Reality".

For the "Healthcare Orientation" dimension, there were statistically significant differences between the means attributed by teachers and students for the following subdimensions: "Healthcare Promotion", "Diagnosis", "Dental Treatment", "Oral Health Team", and "Multiprofessionality".

In the "Teaching-service Integration" dimension, professors attributed the same performance to the subdimensions "Internship Activities" and "Experiences Within the SUS" (mean=7.9). For the students, the performance of the subdimensions was similar, in which the subdimension "Internship Activities" obtained an average of 8.1 and "Experiences Within the SUS" obtained an average of 8.0.

In the "Pedagogical Approach" dimension, there were statistically significant differences between the averages assigned by professors and students for the "Faculty Development" subdimension (p=0.000).

Table 1. Distribution of the general and functional characteristics of the teachers and the corresponding curricular components delivered.

Professors' characteristics	n	%
<i>Gender</i>		
Female	31	56,4
Male	24	43,9
<i>Age range</i>		
30 to 39 years old	20	36,4
40 to 49 years old	13	23,6
50 +	22	40
<i>Educational formation time</i>		
Up to 10 years	4	7,3
11 to 20 years	23	48,1
21 to 30 years	13	23,6
31 +	13	23,6
Not answered	2	3,6
<i>Degree</i>		
Specialization	1	1,8
Master's Degree	4	7,3
Doctorate	50	90,9
<i>Time of practice as a professor (years)</i>		
1 to 5	4	7,3
6 to 10	13	23,6
11 to 20	17	30,9
21 to 30	14	25,5
31 +	7	12,7
<i>Development of other activities besides teaching</i>		
Research	46	83,6
Extension	39	70,9
Post-graduation	13	23,6
Administrative	6	10,9
<i>Year of undergraduate teaching</i>		
1st	9	16,4
2nd	23	41,8
3rd	29	52,7
4th	20	36,4
5th	18	32,7

Table 2. Distribution of characteristics of participating dental students

Student's characteristics	n	%
<i>Gender</i>		
Female	124	61,7
Male	77	38,3
<i>Current graduation year</i>		
1st year	37	18,4
2nd year	43	21,4
3rd year	47	23,4
4th year	43	21,4
5th year	31	15,4
<i>First degree in higher education</i>		
Dentistry (current)	168	83,6
Others	33	16,4
<i>Intention of entering the job market</i>		
Family Health Strategy	31,3	63
Private practice	26,9	54
Teaching and lecturing	15,9	32
Hospitals	15,4	31
Others *	10,4	21

*Researcher, Center for Dental Specialties, military service, forensic dentist

The dimension with the best evaluation by professors and students was “Teaching-service Integration” with 79.5% and 80% of the maximum expected value for this dimension, respectively. The dimension with the lowest performance according to the perception of professors and students was “Pedagogical Approach”, with a relative performance of 70.9% and 74.9%, respectively. On the other hand, the General Course Evaluation obtained a relative performance of 74.4% for the professors and 78.0% for the students, considering the maximum score expected for the undergraduate course in the evaluated dimensions. In absolute values and varied proportions, all dimensions were better assessed by students than by professors, similarly to the result found in the subdimensions, with this difference being significant for the dimension “Healthcare Orientation” (table 4).

4 DISCUSSION

The evaluation of undergraduate courses in higher education is necessary for the knowledge of their structures, foundations and objectives. It should not be limited to the evaluative act, but should integrate an evaluation process. This process reveals weaknesses and strengths of the implemented actions, leading to reflection and discussion that guides the adoption of constructive actions¹¹.

In a universe of scarcity of studies that propose an evaluation of healthcare courses with validated criteria, the criteria matrix developed by Pessoa and Noro (2015)⁹ has the distinction of having questions related to the graduate profile idealized by the NCG, as well as questions related to the current demands of healthcare. However, the absence of evaluative criteria related to leadership and management aspects was perceived as a limitation of the instrument.

The proposed criteria matrix showed reliability of use in this study (Cronbach's Alpha Index = 0.950). This index, which ranges from 0 to 1, estimates how evenly the items contribute to the unweighted sum of the instrument. The closer the coefficient value is to 1, the more consistent and more reliable the instrument is. In general, the opinion of the professors resulted in lower means, which can

be justified by the acknowledgement of the difficulties and limitations inherent to the institution's structure, organization, processes and perspectives for change, even if limited in their areas of activity. However, although students have a less broad view of the structuring institutional aspects, they have a more comprehensive experience of all moments of the course.

Table 3. Evaluation of the subdimensions by professors and students of the Dentistry course (Mann-Whitney Test)

Dimension	Subdimensions	Professors			Students			p value
		Mean	SD	Median	Mean	SD	Median	
Graduate Profile	Generalist	7,8	1,5	8,0	8,1	1,6	8,0	0,143
	Humanist	7,6	1,4	8,0	7,8	1,8	8,0	0,129
	Autonomous	7,2	1,5	7,0	7,4	1,7	8,0	0,175
	Critical/reflective	7,4	1,6	8,0	7,8	1,5	8,0	0,056
	Able to Understand the Social Reality	7,4	1,6	8,0	8,2	1,6	8,0	0,001*
Healthcare Orientation	Epidemiological Approach	7,3	1,7	8,0	7,4	1,6	8,0	0,699
	Healthcare Promotion	7,5	1,6	8,0	8,2	1,4	8,0	0,012*
	Diagnosis	7,2	1,9	8,0	7,8	1,6	8,0	0,028*
	Dental Treatment	7,7	1,7	8,0	8,4	1,3	8,0	0,007*
	Oral Health Team	6,7	2,1	7,0	7,5	1,8	8,0	0,003*
Teaching-service integration	Multiprofessionality	6,6	2,1	7,0	7,5	1,9	8,0	0,008*
	Internship Activities Experiences Within the SUS	7,9	1,6	8,0	8,1	1,8	9,0	0,292
Pedagogical Approach	Experiences Within the SUS	7,9	1,6	8,0	8,0	1,7	8,0	0,704
	Active Methodologies	7,2	1,6	7,0	7,4	1,7	8,0	0,278
	Professor's Role	7,9	1,4	8,0	7,8	1,6	8,0	0,275
	Faculty Development	6,4	2,3	7,0	7,7	1,6	8,0	0,000*
	Learning Scenarios	7,0	2,3	8,0	7,7	1,7	8,0	0,060
	Integrated Curriculum	6,9	2,0	7,0	7,3	1,8	8,0	0,183
	Processual Assessment of Student Learning	7,2	1,5	7,0	7,3	1,5	7,0	0,628
	Curricular Flexibility	6,3	2,1	7,0	6,7	2,0	7,0	0,304
Teaching-research-extension Articulation	7,8	1,9	8,0	8,0	1,5	8,0	0,794	

Table 4. Relative performance, mean, standard deviation and significance level (p) of the comparison between means (Mann-Whitney Test) obtained in the dimensions and in the overall assessment of the course by professors and students

Dimensions	Maximum expected	Professors			Students			P value
		Mean	SD	Relative performance (%)	Média	SD	Relative performance (%)	
Graduate Profile	46	34,7	6,1	75,4	36,2	5,8	78,7	0,109
Healthcare Orientation	51	36,5	7,6	71,6	39,7	5,8	77,8	0,012*
Teaching-service Integration	19	15,1	2,9	79,5	15,3	3,1	80,5	0,446
Pedagogical Approach	80	56,7	12,6	70,9	59,9	9,6	74,9	0,243
Overall Course Evaluation	37,2	27,7	4,8	74,4	29,0	3,8	78,0	0,080

It was observed that in the “Graduate Profile” dimension, in general, professors evaluated positively the subdimension "Generalist" that defines the professional who, in the collective field, develops health promotion and service management actions, while in the individual field, carries out prevention, diagnosis, planning and dental treatment of the main oral conditions¹⁰. The students evaluated positively the subdimension "Able to Understand the Social Reality", emphasizing that they see themselves as a subject that "identifies the social context in which they develop their professional practice, respecting the population's characteristics and seeking solutions appropriate to this reality"⁹.

The positive results found in this dimension refer to an advance toward a training that is in accordance with a current demand, in which health professionals must be educated to be competent to act in a manner centered on patients and on the real needs of the population.

Professionals trained in this logic must mobilize the knowledge and skills to compose locally responsive teams, whose ultimate goal is to ensure universal coverage of comprehensive, high-quality services that are essential to promote opportunities for equity in health¹³.

In the “Graduate Profile” dimension, the subdimension "Autonomous" obtained the lowest performance for both professors and students. The subdimension "Autonomous" defines the graduate as a professional who makes decisions both in clinical procedures and in management and collective work situations with security and ability⁹. This result shows a weakness in the course regarding the fulfillment of the NCG's objective, which is to guarantee a professional training guided by autonomy, where students should "learn to learn", "learn to be", "learn to do", "learn to live together", and "learn to know"¹.

The development of professional autonomy during undergraduate courses is

connected to the adoption of active methodologies in the teaching-learning process. In order for the student to develop this ability, it is necessary to innovate, dynamize and problematize situations, transforming them into moments of rich learning that go beyond the limits of a disciplinary curriculum based on traditional values¹⁴.

It was observed in the course the preservation of the tendency of conservative healthcare orientation focused on the appreciation of dental procedures. Observing the dimension "Healthcare Orientation", we found some challenges to be overcome in the training currently offered in the Dentistry course. In the professors' perception, the greatest weakness is related to the subdimension "Multiprofessionality" that refers to the development of orientation activities for multiprofessional and interdisciplinary care with students, technicians or professionals from the same area and/or from other different areas, foreseeing the integrality of healthcare actions⁹. This dimension obtained lower averages in the evaluation by professors, which is justified by the fact that the learning environment in dentistry is very restricted to the school clinics during the professionalizing cycle, preventing a greater interaction with other students and professionals from related areas.

In these results attributed by lecturers, a strong tendency of the traditional dentistry training model, focused on dental treatment, can be noticed, since the best evaluated subdimensions were directly related to the resolution of oral problems, while those with the lowest performance were related to teamwork skills.

The students, on the other hand, perceive the subdimension "Epidemiological Approach" as a weakness in the healthcare orientation addressed in the course, not identifying in the

course a "curricular structure organized based on the epidemiological reality of the region and the country, based on the health needs of the population"⁹. This subdimension obtained the lowest average score assigned by students.

Given this scenario, the breakdown of the training process focused on the privatistic concept in dentistry is evident. Educational institutions should consider the importance of the new concepts in training, based on the NCG as a differentiating factor of their graduates. The humanization, the capacity for reflection, generalist care, and the understanding of social reality should bring new vigor to the dental class, resulting in a greater appreciation of professionals in the eyes of the population.

An important finding related to the "Teaching-Service Integration" dimension was the best evaluation attributed by professors and students to this dimension. This result reflects a counterpoint to the traditional training in Dentistry. The better evaluation of this dimension by students in this cycle indicates the recognition and appreciation of such activities as important training processes.

The strengthening of teaching-service integration found in the institution's Dentistry course in the study is a tendency contrary to what is observed in the predominant training in the dental area. In a similar study, which portrayed the evaluation of dental courses in the northeastern region from the perspective of course coordinators, conducted by Pessoa (2015)¹⁵, the "Teaching-Service Integration" dimension obtained the worst relative performance among the evaluated dimensions.

From this perspective, the main collaborating strategy in the process of changing practices in healthcare education in the Dentistry course of the institution under study was the teaching-service integration, which was one of the axes responsible for the solidification of the

curricular proposal, through the implementation of internships in all periods of the course that represent various actions in the interface between teaching and service.

It was noticed in this study that most of the participating educators had between 11 and 20 years of teaching, so the beginning of their careers took place in a context totally different from the current training demands. Thus, it is essential to establish strategies that enable the development of professors, and that these strategies are not restricted only to the area of training in specialized technical and clinical procedural level, but are directed mainly to new methodological concepts for teaching and learning.

Another important aspect for the effectiveness of the NCG in the Dentistry course evaluated in this study is the subdimension "Professor's Role", which evaluated the professor's position as a "learning facilitator, knowledge manager, and articulator of activities that promote student learning"⁹.

In a study that aimed to analyze the teaching procedures adopted in dental courses, Sena et al. (2015)¹⁶ found that 96.7% of the curricular components analyzed adopted expository lectures as a teaching approach; the demonstrative lectures where the professor assumes the role of showing the application of concepts was the second most common approach, present in 73.3% of the curricular components analyzed. Another study conducted by Chiarella (2015)¹⁷ evaluated the teaching-learning process of a Medical course through interviews with professors, highlighting that 56.7% of the interviewees referred to a "banking methodology of teaching", attributing to their role the function of passing on knowledge to students. Such studies demonstrate a tendency that is the inverse of the professor's role required by the NCG, leading the students to a passive,

uncritical posture that only reproduces the orientations transmitted by the lecturer.

In relation to the Pedagogical Approach dimension, which obtained the lowest relative performance in the course evaluation, the subdimension "Curricular Flexibility" stands out for the lowest performance. "Curricular flexibilization", which is defined by the presence of tolerance, including the workload, in the fulfillment of the curriculum so that students can create their own paths for the development of specific vocations, interests and potentials⁹. This subdimension obtained the lowest average rating by both professors and students in the Pedagogical Approach dimension.

The low performance in the Curricular Flexibility" dimension is justified by the course's heavy workload, which is also full-time. Added to this, there is a large number of curricular components, which in turn demand many out-of-class activities, especially in clinical disciplines in which the cleaning and organization of instruments and supplies demand a lot of student dedication time. There are not many gaps in the curricular components so that the students can suggest contents of their interest and contribute in the construction of the taught contents; on the other hand, due to the lack of interaction among the components, many contents are exhaustively repeated in several disciplines during the course. This result agrees with that found in the study by Fadel and Baldani (2013)¹⁸ in which the need for better distribution of workload and content was mentioned by students as a weakness of the analyzed Dentistry course.

An important characteristic found was the performance of the subdimension "Teaching-research-extension Articulation", which can be described as the "involvement of research and extension as curricular strategies that provide integral formation of the student"⁹. This subdimension was very well evaluated by

professors and students, not being conditioned to satisfaction with the course, perception of adequacy to the NCG or to the performance cycle.

In the traditional panorama, it is expected to be a context of disarticulation between teaching, research and extension, where these three aspects are developed independently, without generating transformative impacts on the students' training process. In this scenario, teaching receives greater emphasis and resources, although it has little focus on the needs of the population, research is developed superficially without the participation of the population for which it is intended, and extension is developed on the margins of the university, taking fragments of university concerns to the population¹⁹.

The results found are not compatible with this perspective, indicating that in the Dentistry course studied, the articulation teaching-research-extension occurs effectively and contributes to the development of the student during graduation. Therefore, it is necessary to expand the number of vacancies and scholarships for existing institutional projects, as well as to create new programs that enable changes in dental education. For the articulation teaching-research-extension to continue advancing as a transforming agent in the course's teaching practices, it is essential to rethink the flexibility of the workload that guarantees students the possibility of engaging in extracurricular projects.

A good perception of the SUS as a place to work can be verified in the students' desire to enter the Family Health Program, since most of them (31.1%) mentioned it as their first option for entering the job market. A positive perception of dental students regarding the SUS could also be verified in the study by Noro and Torquato (2011)²⁰, in which 80.9% of the students reported

a favorable opinion of the SUS and 85.1% considered their professional insertion in the SUS likely or very likely.

It is evident, therefore, that curricular changes that go beyond the mere organization of the curricular components are necessary, the needed modifications must go through the theoretical and pedagogical framework of the course and the structural organization of the educational institution. To achieve this, it is necessary to qualify teachers, change practice scenarios and the approach of the teaching-learning processes²¹. Such considerations should go beyond the scope to which they are traditionally confined, the public health field, and encompass the other agents involved in the teaching process in order to promote a broad view of training oriented towards the SUS, emphasizing the integrality of healthcare practices²².

It is understood that it is necessary to reflect more deeply on the ways and means in which professional training in Dentistry has been taking place in undergraduate courses, in order to verify whether the curricular contents taught and the teaching methodologies used offer the students the learning of both the technical procedures that are indispensable to professional practice and, also, the development of a critical vision in relation to the work process and the world around them. Not only in the specialized technical quality, but essentially from the social scientific perspective, making the concepts learned during graduation be applied to the majority of the population, attributing greater social impact to oral health actions. To this purpose, it is essential to establish strategies that go beyond the conventional patterns of education, rethinking the pedagogical practices in order to strengthen the implementation of changes in professional training in Dentistry²³.

It is emphasized the importance of the

evaluation process as a continuous and constant act, where the practice of self-evaluation should be encouraged and valued in undergraduate courses. To advance towards the transformation of professional training in healthcare, such processes should be able to assess perceptions of all those involved in the teaching-learning process in order to qualify health teaching.

5 FINAL REMARKS

Knowing the limitations of the course regarding the evaluated criteria, most of the teachers were unsatisfied with the educational formation offered in the program. Even so, most students were satisfied with the training offered in the course and considered the course adequate to the NCG, assigning higher averages for the evaluation of the dimensions and subdimensions. Although many advances have been made since the last curricular update, especially in the area of teaching-service integration, the Dentistry course at the Federal University of Paraíba needs to advance in the implementation of the changes proposed by the NCG. The need for better curricular integration was noticed, a challenge inherent to the course structure, composed of departments that have different ways of acting, constituting a barrier that results in a fragmented formation.

A better performance of the “Teaching-service Integration” dimension was observed, having the best relative performance among the evaluated dimensions. In this perspective, we propose the establishment of a joint partnership between the departments that make up the Dentistry course of the studied institution.

Finally, the need for improvement in the pedagogical approach dimension and its subdimensions became evident, concluding that, in order to construct a graduate profile in accordance with market demands and the prerequisites contained in the NCG, a student

assessment process that corresponds to the abilities and competences one wishes to build must be carried out. To this end, it is essential to establish strategies that enable professional development, and that such strategies are not restricted to the area of specialization level training, but are directed mainly to new methodological concepts for teaching and learning.

RESUMO

Avaliação de um curso de Odontologia com base nas Diretrizes Curriculares Nacionais: um estudo seccional

O estudo teve por objetivo avaliar, a partir da visão de professores e estudantes, um curso de graduação em Odontologia, com base nas Diretrizes Curriculares Nacionais (DCN). Trata-se de um estudo observacional e transversal, com metodologia exploratória, descritiva e de avaliação. A abordagem utilizada foi quantitativa, por meio da aplicação de questionário *online*, por meio de instrumento com critérios validados. A amostra de professores e estudantes do curso foi censitária. A Integração ensino-serviço obteve o melhor desempenho relativo entre as dimensões avaliadas tanto por estudantes quanto por professores. A maior parte dos estudantes considerou o curso adequado às DCN (50,2%), enquanto a maioria dos professores o consideraram parcialmente adequado (56,36%). Os estudantes mostraram-se mais satisfeitos com a formação ofertada no curso atribuindo maiores valores de média para todas as dimensões e subdimensões. Referente ao perfil do egresso, professores e estudantes atribuíram o pior desempenho à subdimensão “Autônomo”, o melhor desempenho foi atribuído às subdimensões “Generalista” e “Capaz de compreender a realidade social”. Na dimensão Orientação do cuidado em saúde professores e estudantes atribuíram melhor desempenho à subdimensão “Tratamento odontológico”, enquanto o pior desempenho foi atribuído à “Multiprofissionalidade” e “Enfoque epidemiológico”. Na dimensão Abordagem pedagógica, o melhor desempenho foi atribuído às subdimensões “Papel do professor” e “Articulação ensino-pesquisa-extensão”, o pior desempenho foi

atribuído por professores e estudantes à subdimensão “Flexibilização curricular”. A dimensão Integração ensino-serviço e subdimensões relacionadas foram bem avaliadas tanto por professores quanto por estudantes. As principais fragilidades encontradas estão relacionadas com dimensões que abordam as relações profissional/paciente e a as relações entre o cirurgião-dentista e a equipe de saúde durante a formação profissional. Faz-se necessária a criação de estratégias de reorientação da formação direcionadas a novos conceitos metodológicos de ensino e aprendizagem para a efetivação das DCN no curso de Odontologia avaliado.

Descritores: Educação em Odontologia. Educação Baseada em Competências. Capacitação de Recursos Humanos em Saúde. Currículo.

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