

Entry into the dental job market: perception of undergraduate students in dentistry regarding acquired skills and expectations

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ABSTRACT

The aims of the present study were to evaluate the perceptions of dental students regarding the skills acquired during their undergraduate course to begin their professional activities and identify aspects of the professional plans. Student's from the tenth semester of two higher education institutions answered a self-administrated questionnaire addressing the skills stipulated in the Brazilian National Dental Curriculum Guidelines and their plans for beginning their professional careers. One hundred three of the 132 questionnaires were answered. Most students (n = 87; 84.46%) planned to begin their careers in a private and/or public clinic as a service provider and planned to continue their studies in specialization and/or improvement courses (n = 72; 69.89%). Most students felt confident regarding clinical skills related to basic care procedures (> 70%) but much less confident regarding specialized procedures. With regard to general skills, the students reported difficulties in terms of leadership and management (42.71%). They are not fluent in any foreign languages (28.15%) and have realistic expectations of financial gains. They understand the job market well, perceive the need to continue their studies, are confident with regard to some acquired general and clinical skills and perceive that others are insufficient. Reconsidering the mode of teaching, the teaching-learning process and evaluation methods could be a way to potentiate the National Dental Curriculum Guidelines.

Descriptors: Dental Students. Professional Skills. Teaching. Health Care Sector.

1 INTRODUCTION

The first steps in higher education in dentistry were marked by a technician-organicist approach identified with the biomedical health care model. According to Barros,¹ the target in

this model went from the history of disease to a clinical description of the findings related to the pathology, prizing the individual aspect over the collective aspect.

The practice of dentistry was influenced

by this model and teaching was directed toward the private dental office and the offer of services in the private sector. At the time, the educational background of dental professionals was restricted to knowledge and fragmented practices, tending toward early specialization and reaching a small portion of the population.²

The expansion of dentistry occurred between the 1960s and 1980s, during which competitive mechanisms were created in the quest to equate the offer with the demand for services. These movements led dental services to the cult of specialization as a form of professional differentiation and a justification for the costs of the service. While the mechanism was positive on the one hand, by driving dental professionals toward the search for greater knowledge, the increase in the number of dental professionals in the market, along with the economic-social juncture, initiated a process by which such professionals began to charge minimal amounts for the services practiced. The result was a retraction of the job market.³

One of the paradigm shifts that have been occurring as a response to the situation found in dentistry consists of a change in the teaching approach. Considering the new dental practices needed in Brazil, the National Board of Education defined the National Curriculum Guidelines (NCGs) for undergraduate courses in dentistry in 2002. This document stipulates the skills and general competencies required to exercise the profession with a commitment to health, continued updating, ethics and civil duty as well as the development of leadership, management and communication skills in a process that considers curricular integration as the strategy for the formation of *generalist, humanist, ethical, critical and reflective dental professionals capable of serving on all levels of health care*.⁴

Despite the implementation of changes in the curricular structures and teaching projects of the courses with the aim of incorporating the norms of the NCGs, there remain shortcomings that must be overcome. Such frailties may be outside the teaching project and may fall in the gap between the role and practice. An example is the responsibility of the educational institution and teaching staff to prepare critical, reflexive dental professionals that are prone to seeking further knowledge, because such knowledge always emerges.⁵

It is important to identify the perception of undergraduates in this moment of transition to gain a better understanding of vocational issues and investigate important aspects to be considered in the formulation of intervention proposals for this group. Thus, the aim of the present study was to evaluate the perceptions of dental students regarding the skills acquired during their undergraduate course to begin their professional activities and identify aspects of their professional plans.

2 METHODS

An exploratory, cross-sectional study was conducted with students of dentistry from two Brazilian higher education institutions: a public institution in the southeastern region of the country and a private institute in the northeastern region. The two schools were selected by convenience. The public institution accepts 144 students annually and the private institution accepts 90. There was no intention to compare the two institutions. Both schools were included in the study with the aim of enriching the diversity of the educational contexts.

According to the documents of the two institutions, the mission of the public school is to “*generate and disseminate scientific, technological and cultural knowledge, standing out as an institution of national reference,*

forming critical, ethical individuals with solid scientific and humanistic bases committed to transformative interventions in society as well as both regional and national socioeconomic development”, whereas the mission of the private institution is “to promote quality higher education with critical and socially compromised knowledge”.

Data collection was performed between August and November 2016 using a self-administrated questionnaire. The main researcher collected all data.

Students enrolled in the final semester of the course who agreed to participate were included in the study. As the questionnaires were filled out in the classroom at both institutions, students absent from school on the day scheduled for data collection were excluded from the study.

The questionnaire was structured in five parts: 1. Modality of entry into the job market (own office, employee in clinic and public service); 2. Expectations for initial years after graduation with regard to continuing studies (improvement, specialization, master’s degree and doctoral degree); 3. Questions addressing skills and competencies stipulated in the NCGs for dentistry courses – responses of “yes” or “not yet” to items on a list: first section addressing general skills for situations related to the practice of dentistry (leadership, managements, educational actions, prevention, health promotion on collective level); second section addressing clinical skills represented by dental procedures (diagnoses, restorations, surgeries, etc.); 4. Questions addressing financial expectations soon after graduation and after five years of experience; 5. Proficiency in languages (Portuguese, English, Spanish and other languages).

To test the applicability of the questionnaire, a pilot study was conducted with

10 students in the ninth semester of the dentistry course at both schools to identify items that generated doubts. After the analysis of the results, a change was made to one of the statements for which a need was identified to improve its understandability. The students in the pilot study were not included in the final sample.

Prior to the distribution of the questionnaires, the respondents received clarifications regarding the objectives of the study and those who agreed to participate signed a statement of informed consent in compliance with ethical norms. The data were analyzed descriptively with the aid of the SPSS program, version 23.

This study received approval from the institutional human research ethics committee (certificate number: 58974016.1.0000.5149).

3 RESULTS

One hundred three of the 132 questionnaires distributed were returned (response rate: 78.03%).

Most students (n = 87; 84.46%) planned to begin their careers in a private and/or public clinic as a service provider with or without an official employment status, which is a clearly non-liberalist modality (table 1).

Plans related to continuing studies mainly involved taking improvement and/or specialization courses (n = 72; 69.89%), which is coherent with the proposal of dedication to offering clinical care (table 2).

Table 3 displays the students’ perceptions regarding their general skills for the practice of professional activities. They felt confident in receiving patients, creating ties with patients and performing collective activities (health promotion, disease prevention and health education). However, insecurity was evident regarding the performance of tasks that involve issues such as the management

of public and private services, assuming a post in an association and leading a team. Twenty-two students (21.35%) marked *being an educator in the health field*, although 31 (29.93%) reported plans of obtaining a master's and/or doctoral degree.

Most of the students were highly confident

with regard to performing primary care procedures. Difficulties were reported regarding the extraction of multi-rooted teeth, the extraction of impacted teeth, fixed dentures and dental forensics. Less than 5% of the respondents felt confident regarding implants and placing dentures on implants (table 4).

Table 1. Distribution of students of dentistry in terms of intentions regarding initial professional career

<i>Initial professional intention</i>	n	%
Clinic as outsourced employee	37	35.92
Clinic as outsourced employee and public service	27	26.21
Public service	23	22.33
Own office	9	8.73
Own office and public service	4	3.88
Own office, clinic as outsourced employee and public service	2	1.94
Own office and clinic as outsourced employee	1	0.97

Table 2. Distribution of students of dentistry in terms of intention to continue studies

<i>Continuation of studies</i>	n	%
Specialization	26	25.24
Improvement and specialization	24	23.30
Improvement	22	21.35
Master's degree	7	6.79
Specialization and master's degree	7	6.79
Improvement, specialization and master's degree	5	4.85
Improvement and master's degree	4	3.88
None	3	2.77
Master's and doctoral degrees	2	1.94
Improvement, specialization and doctoral degree	1	0.97
Specialization, master's and doctoral degrees	1	0.97
Improvement, specialization, master's and doctoral degrees	1	0.97

In terms of language proficiency, 89 (86.40%) of the respondents reported that they spoke, read and wrote Portuguese well. Regarding foreign languages, the proficiency rate ranged from 12.62% to 28.15% for English and 8.73% to 18.44% of Spanish. A total of 10.60% of the students reported knowledge of other languages (French, Japanese, Italian and

Greek).

Approximately half of the students expected a mean monthly salary between R\$ 2000 and R\$ 3000 for the beginning of their careers, reaching R\$ 6000 to R\$ 8000 by five years after graduation, which is considered the minimum time necessary to achieve relative financial stability.

Table 3. Distribution of students of dentistry regarding self-rated general skills acquired during undergraduate education

<i>General skills</i>	n	%
Receiving patients	101	98.05
Building ties with patients	99	96.11
Performing collective health promotion actions	97	94.17
Taking initiative	95	92.23
Performing collective prevention actions	95	92.23
Performing collective health education actions	94	91.26
Being an employer	78	75.72
Managing a dental office	44	42.71
Leading a health team	35	33.98
Managing public health services	33	32.03
Assuming a post in an association	32	31.06
Managing private health services	29	28.15
Being an educator in the health field	22	21.35

Table 4. Distribution of students of dentistry regarding self-rated clinical skills acquired during undergraduate education

<i>Clinical procedures</i>	n	%
Diagnosis of dental caries	103	100.00
Performing as clinician	102	99.02
Anesthesia	101	98.05
Diagnosis of periodontal disease	100	97.08
Supragingival scraping	99	96.14
Prescription of analgesics	98	95.14
Crown polishing	97	94.17
Extraction of single-rooted teeth	96	93.26
Subgingival scraping	96	93.26
Restorations in amalgam	94	91.26
Prescription of anti-inflammatory agents	94	91.26
Diagnosis of enamel defects	93	90.29
Esthetic restorations	91	88.34
Treating children	88	85.43
Extraction of root tips	86	83.49
Diagnosis of malocclusions	84	81.55
Prescription of antibiotics	78	75.72
Minor periodontal surgery	74	71.84
Indirect restorations	72	69.90
Diagnosis of mucosal lesions	71	68.93
Complete removable dentures	64	62.13
Prosthetic crowns	61	59.22
Extraction of primary teeth	58	56.31
Fixed dentures	45	43.68
Partial removable dentures	45	43.68
Occlusal adjustments	42	40.77
Treating patients with special needs	42	40.77
Extraction of multi-rooted teeth	37	35.92
Extraction of impacted teeth	37	35.92
Dental forensics	14	13.59
Prosthesis on implants	5	4.85
Implants	2	1.88

4 DISCUSSION

In the practice of teaching, it is common to find students anxious about what they consider necessary to learn, which is often disproportional to the length of the course. They believe that their education is insufficient to meet the challenges of the working world.⁶ This perception motivated the present study, in which the aim was to investigate self-perceived confidence among students concluding two courses in dentistry considering aspects related to their entry into the job market originating from the NCGs.

The students demonstrated a realistic understanding of what awaited them in the “real world”. Only nine of the 132 participants marked “having their own office” as an immediate goal after graduation. Most expected to provide services in the private and/or public sector (table 1).

In a study involving recent graduates, Zitzmann *et al.*⁷ found that 76.4% had been allocated to the private network. Although the work contract most often did not involve official hiring as a permanent employee, such individuals feel employed with the possibility of earning a monthly wage, which is considered impossible in when one first opens one’s own dental office.

However, the dentists who choose this as an ideal to pursue do so in opposition to the majority of workers, who avidly seek inclusion governed by the wage regimen. The consent to the labor subcondition imposed by the market generates professional precariousness in dentistry.⁸ However, these young dentists understand the problem and divide this possibility with inclusion in the public sector, combined or not with inclusion in the private sector.

Some authors have found a preference for entry into a career in the public sector.⁹ In a study conducted in a dentistry course in the state of Minas Gerais, Brazil, most students (89.0%) in all semesters of the course intended to begin their

careers at a public service.¹⁰ Therefore, a certain distancing is seen from beginning a career in one’s own dental office and the desire to seek career opportunities that offer a salary and some financial security.

Regarding plans to continue their studies, only 2.77% of the sample did not intend to take a postgraduate course. A high proportion reported plans to become a specialist: 63.09% intended to take a specialization course and, among these students, 37.85% intended also to take an improvement course and/or obtain an advanced degree (master’s and/or doctorate) (table 2).

This finding is in agreement with data described in previous studies^{11,12} and suggests a tendency toward the calcification of the biomedical healthcare model, which emphasizes specialization rather than a generalist approach.¹³ Thus, it is possible to question whether this choice is conscious or not, since the curricular structure of dentistry courses is composed of intense clinical practice.^{14,15}

However, it is necessary to consider that there is no certainty of the sufficiency of the educational process regarding the preparation of students for the job market or even with regard to some clinical procedures. This is a problem that, according to the students, specialization and improvement courses could solve.⁶

Regarding the general skills needed to exercise the profession, less than 43% demonstrated aptitude for tasks involving management, leading a health team or assuming a post in an association. In contrast, more than 75% reported feeling confident with regard to performing collective actions, being an employer, taking initiative and building ties with patients. These findings reveal a certain contradiction, as the latter functions require leadership skills.⁴

A small number of the respondents reported intentions to follow a career as an educator or researcher. This finding, together with the desire

to continue one's studies in specialization courses, underscores the tendency toward clinical work. In contrast, a study conducted at a Swiss university found that more than 80% of graduates were either in the process of obtaining a doctoral degree or had already obtained one.⁷ Incentive for postgraduate studies *sensu stricto* is essential in Brazil, considering the fact that there are dental professionals with master's and doctoral degrees who use this academic background for the purposes of non-teaching work.

Regarding administrative tasks and entrepreneurship, the NCGs guide education toward the development of leadership, administration, management and communication skills. The results of the present study show the insecurity of the students regarding such skills. Similar data are reported in a study involving students from all semesters of a dentistry course, in which the majority of interviewees judged themselves incapable of performing activities such as conducting administrative meetings and leading a dental team.¹⁶

The students demonstrated limited understanding of these skills. Only 33.98% reported being capable of leading dental teams. However, 75.72% considered themselves capable of being an employer, while few reported having the ability to manage a private health service (28.15%).

Another aspect to consider is the option for the public sector. Currently guided by the Family Health Strategy, the public sector performs work in teams and, fatally, such skills, which the students considered weak, are necessary for the work to flow and for useful relationships to be established.¹⁷

A study involving the implementation of activities related to the reception of the patient, such as scheduling appointments, receiving and discharging the patient, preparing invoices and issuing documents, found improvements in the

administrative skills of dental students.¹⁸ Leadbeatter *et al.*¹⁶ conceive these complementary skills as the “*overcomplexity of contemporary dental practice*”, pointing out that learning for current dental practice cannot be achieved only through the acquisition of theoretical knowledge and technical abilities; students must be prepared for situations with no obvious solution and questions with no direct answers. Likewise, other authors state that the dental educational curriculum should emphasize activities such as business management, stress management and communication skills.¹⁹

Regarding the skills needed to perform clinical procedures, the students felt confident for the majority of those stipulated in the NCGs, with lower levels of confidence concerning procedures of greater technological complexity or specialized procedures, such as dentures, the extraction of multi-rooted teeth, dental forensics and dental implants. A study with similar results suggests that an increase in clinical activity in complex procedures could improve the self-confidence of students.²⁰ However, some of these skills are within the realm of specialized practice. The data enable the inference that the preparation for general practice seems to be implemented.

Some clinical skills make up part of the roster of needs and demands, especially of the adult and elderly population, such as unit prostheses (indirect restorations and prosthetic crowns), removable dentures or endodontic treatment in primary teeth. These are skills of the secondary level of health care, but a daily work demand of clinicians in the private sector. Therefore, the intention for improvement and/or specialization is justified.

The difficulty in diagnosing mucosal lesions is disconcerting. It is necessary for students to know that a stomatologist requires experience and daily practice. However, examinations, identification and referrals in the occurrence of

any abnormality are fundamental skills to acquire.

A paradox is found with regard to performing restorations, with a confidence index ranging from 69.90% to 91.26%, and occlusal adjustments (40.77%), which are directly related procedures, but may be fractionated in the organization of the teaching process. Future studies should investigate these contradictory points further.

The data found regarding language proficiency reveal the difficulty the students have in communicating in foreign languages, which represents a potential barrier in relation to scientific updating and the internationalization of dentistry.²¹⁻²³ Although not the official language in the majority of European and Latin American countries, English is common in both scientific and cultural exchanges, making it an important second language. Moreover, a large part of the literature is produced in English. Therefore, this difficulty could become a stumbling block to updating one's knowledge, which is necessary and indispensable.

Most dental students throughout the world do not have an educational background in English. In Saudi Arabia, researchers observed the need for greater focus on the English language in the pre-university of students of dentistry in order to prepare them for the challenges of a university education.²⁴ Likewise, with the aim of broadening knowledge on the motivations of Japanese students and providing information on the internationalization of dentistry, studies have concluded that incentives and motivational strategies are needed to prepare clinicians, educators and researchers for a world without borders.^{22,23}

Regarding income, the students reported expecting an average monthly wage of R\$ 2000 to R\$ 3000 (2.27 to 3.4 times the Brazilian monthly minimum wage) at the beginning of their careers, reaching an average of R\$ 6000 to R\$ 8000 (6.81

to 9.08 times the monthly minimum wage) five years after graduation.²⁵ These findings reveal realistic expectations regarding the job market. A survey conducted by the Institute of Applied Economic Research published in 2013 reports that the monthly income of Brazilian dentists varies among the different regions of the country, with a mean of R\$ 5367 (7.91 times the monthly minimum wage) for all levels of experience and activity.²⁶

Studies with the aim of evaluating and understanding the perceptions of students regarding the job market and the skills acquired throughout their educational experience are important to improving educational activities.

This study identified some changes and trends that have occurred in dentistry regarding entry into the job market and realistic possible gains. The students intend to be clinicians and this impels them to seek improvement or specialization courses, possibly due to insecurity regarding their ability to perform certain clinical procedures. However, some general skills that are also insufficient (or are not acquired) do not appear to be a concern yet, as the students do not yet have plans regarding how to acquire them.

It is necessary to identify why clinical aspects, for which there is a larger workload in undergraduate courses, remain a source of insecurity among students who are concluding their courses and are about to enter the working world.

Attempts should be made to develop new forms of teaching that are more reflective and less restricted to protocols, enabling space for creativity and reinvention. Knowledge building, rather than repetition, could be the solution.

On paper, the NCGs have existed for 15 years, but progress in terms of skills remains limited. We need to make a leap in quality regarding the preparation of dental professionals. It is not an increase in workload, as the students

think, that will lead to success. It is not by increasing the number of hours spent with the professor. It is necessary to give future dental professionals the skills to manage their own lives and their own learning. With autonomy, insecurity vanishes.

The present study has limitations that should be considered, such as the non-probabilistic, non-calculated sample in relation to the total number of students concluding dentistry courses in Brazil. Moreover, a self-administrated questionnaire was used, which the respondents may not have answered with the utmost rigor. However, this study reveals important evidence regarding the education of students of dentistry, contributing data to the literature that have not previously been addressed. Validated questionnaires should be used in future studies in order to produce results with a greater degree of reliability.

5 CONCLUSION

The students concluding courses in dentistry who participated in the present study demonstrated a good understanding of the working world, as they perceive their entry into the job market as service providers or employees with expectations of income compatible to the “real world”. They are confident with regard to the acquisition of some general skills, but feel inadequate regarding issues related to management and leadership. They also feel confident regarding the acquisition of certain clinical skills, especially those related to primary care activities. The intention to continue their studies is not linked to need for continued learning, but is due to the perception of having received an incomplete education. They do not consider themselves to be fluent in other languages, which is an important aspect of professional development.

RESUMO

Inserção no mundo do trabalho odontológico: percepção de graduandos em Odontologia sobre habilidades adquiridas e expectativas

Esta pesquisa teve como objetivo avaliar a autopercepção do estudante de odontologia quanto às habilidades adquiridas na graduação para o início de suas atividades profissionais, além de identificar aspectos de seu projeto profissional. Os estudantes do décimo período de duas Instituições de Ensino Superior responderam a um questionário autoaplicável, com perguntas relacionadas às habilidades e competências previstas nas Diretrizes Curriculares Nacionais de Odontologia, e relativas ao seu projeto inicial de vida profissional. Dos 132 questionários distribuídos, 103 foram respondidos. A maioria dos estudantes considerou iniciar carreira em clínica privada e/ou pública (87; 84,46%), como prestador de serviços. Planejam continuidade de estudos em cursos de especialização e ou aperfeiçoamento (72; 69,89%); têm segurança em habilidades clínicas relacionadas a procedimentos de Atenção Básica (>70%) e bem menos em procedimentos especializados. Quanto às habilidades gerais apresentam dificuldades em termos de liderança e gerenciamento (<42,71). Não são fluentes em língua estrangeira (28,15%) e apresentam expectativas de ganhos financeiros próximas à realidade. Compreendem bem o mundo do trabalho, percebem a necessidade de continuar os estudos, estão seguros de algumas habilidades gerais e clínicas adquiridas e percebem que algumas estão insuficientes. Rever o modo de ensinar, a relação ensino-aprendizagem e a metodologia de avaliação pode ser um caminho para tornar vivas as Diretrizes Nacionais Curriculares para a Odontologia.

Descritores: Estudantes de Odontologia. Competência Profissional. Ensino. Setor de Assistência à Saúde.

RESUMEN

Inclusión en el mercado de trabajo de odontología: percepción de estudiantes de pregrado sobre habilidades adquiridas y expectativas

Esta investigación tuvo como objetivo evaluar la autopercepción del estudiante de odontología cuanto a las habilidades adquiridas en la graduación para el inicio de sus actividades profesionales, además de identificar aspectos de su proyecto profesional. Los estudiantes del décimo período de dos Instituciones de Enseñanza Superior contestaron a un cuestionario auto aplicable, con preguntas relacionadas con las habilidades y competencias previstas en las Directrices Curriculares Nacionales de Odontología, y relativas a su proyecto inicial de vida profesional. De los 132 cuestionarios distribuidos, 103 fueron contestados. La mayoría de los estudiantes consideró iniciar carrera en clínica privada y/o pública (87; 84,46%), como proveedor de servicios. Acerca del plan de los estudiantes para la continuidad de estudios, planean cursos de especialización y/o perfeccionamiento (72; 69,89%). Tienen seguridad en habilidades clínicas relacionadas con procedimientos de Atención Básica (> 70%) y mucho menos en procedimientos especializados. En cuanto a las habilidades generales presentan dificultades en acciones de liderazgo y gestión (<42,71). No tiene buena convivencia con lengua extranjera (28,15%), presentan expectativas de ganancias financieras cercanas a la realidad. Comprenden bien la realidad del mundo del trabajo, perciben la necesidad de continuar los estudios, están seguros de algunas habilidades generales y clínicas adquiridas y perciben que algunas son insuficientes. Rever el modo de enseñar, la relación enseñanza-aprendizaje y la metodología de evaluación puede ser un camino para hacer vivas las Directrices Nacionales Curriculares para la Odontología.

Descriptor: Estudiantes de Odontología. Competencia Profesional. Enseñanza. Sector de Atención de Salud.

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