

# Technical-scientific profile of graduates from a Professional Master's degree course in Dentistry: a cross-sectional study

Letícia Abreu Costa\*, Sílvia Regina de Almeida Reis\*\*, Urbino da Rocha Tunes\*\*, Alena Ribeiro Alves Peixoto Medrado\*\*

\* Graduated in Dentistry, Bahiana School of Medicine and Public Health

\*\* Ph.D, Professor, Dentistry Course, Bahiana School of Medicine and Public Health

Received: 04/25/2021. Approved: 06/11/2022.

## ABSTRACT

Nowadays there's a growing demand for professionals master's degrees course. However, the impact of this *stricto sensu* postgraduate studies modality in society has been lowly evaluated. This study aims to characterize the profile of students who graduate from a professional master's degree course from a private higher education institution, through their entry in labor market, qualification and technical-scientific production. This is a retrospective cross-sectional census study. Social media, phone and cellphone numbers and personal and institutional emails were used as research strategies of those students who graduated the program. A semi-structured questionnaire was created by the researchers of this study, available in both online and offline versions, to collect data and it was organized in a one-dimensional frequency table, where the following percentage rates were identified. It was found that 71,8% of the graduates responded to the form sent to them. Most of them managed to entry the labor market in an outstanding way, because 62,1% of those joined activities related to teaching. Around 86,5% of them published their researches as scientific manuscripts, beside their outstanding technical production, such as conference presentations, interviews, online informative texts and courses taught. The participation in public and private sectors activities was found in 43,2% and 56,8% of them, respectively. It is concluded that the profile of the students who finish the professional master's degree course in Odontology evaluated in this study is characterized for significant participation in activities related to teaching, such as technical researches and work, with significant participation in the public and private sectors. This modality of postgraduate course provided to the graduates a technically qualified training, characterized as an advanced and transforming practice.

**Descriptors:** Graduate Education in Odontology. Education, Higher. Professional Training.

## 1 INTRODUCTION

Recently, the number of *stricto sensu* postgraduate courses has increased in Brazil. In particular, in the last decade there was an advance in the knowledge of the identity of professional master's degrees courses. Indeed, this modality has been more discussed by the academic community, once it can make a significant impact in training of qualified professionals and as a consequence, it generates technical and technological products for society, in addition to the usual scientific knowledge<sup>1</sup>.

The creation of professional master's degrees was in early 1998, through the CAPES 080/98 ordinance, which deliberated the Framework, Evaluation and Acknowledgment of the Professional Master's degree<sup>2</sup>. Since this historical milestone, the exact understanding of the concept of the professional master's degree has been amplified with more clarity in order to show the distinction of this postgraduate course modality from the previously traditional academic one.

The professional master's degree course is a type of postgraduate course which provides a broad and comprehensive qualification and it aims to reach a higher level of productivity related to technology, entrepreneurship and innovation for institutions, whether they are public or private<sup>3</sup>. It also contributes to the increase of scientific knowledge and its projection in national and international scope, as well as the training of qualified students to meet the demands of society<sup>4</sup>.

In order to guarantee the quality of the professional master's degree courses, the Coordination for the Improvement of Higher Education Personnel (CAPES) set operational and normative criteria to direct and control their implantations and developments. The ordinance N 60 of 2019 updated the regulation on professional master's and doctorate degrees, since professional courses were previously regulated by the

ordinance N 131 of 2017<sup>5</sup>. According to Mendonça Filho (2017)<sup>6</sup>, the authorization, acknowledgment and recognition renewal of professional master's degree courses are gained from the results of monitoring and evaluation conducted by CAPES according to the requirements set out in the legislation - Resolution CNE/CES N 1/2001, amended by Resolution CNE/CES N 24/2002. Currently, 24 Professional Master's programs in Odontology are distributed in different regions of the country, one in the North, six in the Northeast, 14 in Southeast and three in the South. Out of this total, six are inserted in public universities and 18 in private higher education institutions<sup>7</sup>.

Undoubtedly, the quality of graduates in professional master's programs, especially the ones related to health care, represents a great challenge to the coordinators of the programs<sup>8</sup>. The insertion of these students in different professional fields, not only academic, usually contributes to the generation of results to meet specific demands and it favors a higher qualification than the one observed by graduates in traditional academic master's programs<sup>9</sup>.

In this context, the Professional Master's degree course in Odontology at Bahiana School of Medicine and Public Health was authorized by CAPES through Ordinance N 2000, of 20.12.2006 and during the last 14 years it covers areas of concentration in Stomatology, Clinical Dentistry, Periodontics and Oral Implantology. The maintenance of these areas of concentration allowed the institution to develop a balanced Program, which facilitated student recruitments and their graduations in the foreseen time. Nevertheless, since August 2019, the process of deactivation of the course started due to an institutional decision. A year later, the request to deactivate PPgO was sent to CAPES and it was approved by them in October 2020. During the 14

years of its existence, 103 people graduated under this professional master's program.

Given the above, the objective of this study is to evaluate the profile of the graduates from this professional master's degree course in Odontology at a private higher education institution, through their entry in labor market, their qualifications and their technical-scientific production.

## 2 METHOD

This was a retrospective, cross-sectional study submitted to the Ethics and Human Research Committee from the Bahiana School of Medicine and Public Health (EBMSP), according to the norms of the Resolution 466/2012 for human research and it was started right after its approval, under the number CAAE 30870020.1.0000.5544.

A search was carried out in the academic records of the postgraduate secretariat of EBMSP to obtain data from the graduates of the Professional Master's degree course in Odontology who finished their dissertation defense between 2008 and 2020. After the initial data collection relating to sex, age, area of concentration and academic level until the moment of their enrollment in the postgraduate program, social media (Facebook, WhatsApp and Instagram) phone and cellphone numbers and personal and institutional emails were used as research strategies of those students who graduated the program.

An online form (Google Forms) was created, where each individual responded to and, as an alternative option, the same form was printed and filled out by some of the graduates as a pilot test, which corresponds to about 30% of the participants. These 22 printed forms from the pilot test are included in the final sample. The graduates were questioned about their entry in the academy and labor market, as well as their professional

growth since their graduation from the professional master's program, among other information. The collection of data happened between November 2019 and October 2020. From November 2019 until mid-March 2020, before the start of the Sars-Cov-2 pandemic, a trained interviewer contacted the graduates and scheduled meetings to interview them using a printed questionnaire. The interviewer was trained by the postgraduate course coordinator through two training workshops. During 2020, the printed questionnaire turned into an online questionnaire and the interviewer kept in touch with the graduates through the previously mentioned social medias. Only the graduates who fully responded to the questionnaire are included in this study. The graduates who didn't fully respond to the questionnaire or the ones who didn't reply to none of the five invitations to participate in this research are excluded from this study.

Microsoft Excel software was used for data collection and analysis through a spreadsheet, developed specifically for this study. Regarding to qualitative (sex) and quantitative (age when enrolled in the program, qualified production, enrollment in a doctoral program, teaching activities and work in public and private services of health care) variables, the data was collected through a one-dimensional frequency table, where the following percentage rates were identified.

## 3 RESULTS

Out of 103 graduates, 71.8% (n=74) fully responded to the questionnaire. Out of 74 respondents, it is notable that 25.6% (n=19) of them are males and 74.4% (n=55) are females. The average age corresponding to the year of enrollment to the professional master's program is 27±5 years old.

Exactly 86.5% (n=64) of the respondents developed a bibliographic product with their advisors and 77% (n=57) reported to make

technical/technological productions whose greatest representations are work presented in scientific events (37.8%), online production of informative texts (21.7%) and short-duration courses being taught (17.5%). This questionnaire allowed the graduates to inform more than one type of production. Over 90% (n=69) of the

graduates continued their qualified training and they enrolled in other courses, updated their researches and/or joined dental specialty training. Regarding to the enrollment into a doctoral program, 30.4% (n=21) of the graduates chose this modality of stricto sensu postgraduate (table 1).

Table 1. Bibliographic and technical/technologic production and qualified training of graduates (n=74)

<b>Variables</b>	<b>n</b>	<b>%</b>
Productions	74	100.0
Bibliographic	64	86.5
Technical/technological	57	77.0
Qualification	69	93.2
Training	18	26.1
Updates	29	42.0
Specialty training	e32	46.4
Doctoral program	21	30.4

The necessity to increase the knowledge about other languages was felt by 64,8% (n=48) of the participants and English was the language of greatest interest among them. The difficulty to develop national and international professional partnerships was notable by 59.4% (n=44) of the graduates who state to have never established any kind of accreditation and/or agreements in this

regard. Out of 74 graduates, 62.1% (n=46) participated in teaching activities in higher education, 41.4% (n=19) of them in public institutions, 58.7% (n=27) of them in private institutions and 34.8% (n=16) of them in both types of institutions. The teaching time ranged from 2 to 10 years and the average teaching time is 6 years (table 2).

Table 2. Graduates who developed teaching activities and teaching time (n=74)

<b>Variables</b>	<b>n</b>	<b>%</b>
Teaching activities	46	62.2
Public institution	19	41.3
Private institution	27	58.8
Both public and private institutions	16	34.8
Teaching experience		
1 to 5 years	31	67.4
> 5 years	15	32.6

Regarding to their insertion in public health care services, 40,6% (n=13) of them were found in federal institutions, 15,6% (n=5) of them were found in state institution, 43,8% (n=14) of them were found in municipal institutions, meanwhile

25% of them affirm to have worked in at least two public institutions. Amongst the private health care services, professional performance in dental office is the most frequent, 56,8% (n=42) (table 3).

Table 3. Performance of graduates in health care services (n=74)

Health care services	n	%
Public		
Federal	13	40.6
Statel	5	15.6
Municipal	14	43.8
Private		
Dental office	42	56.8

#### 4 DISCUSSION

This study aims to characterize the profile of students who graduate from a Professional Master's degree course in Odontology which began in early 2006, at Bahiana School of Medicine and Public Health. During the 16 years of its existence, 103 people graduated under this program.

During the last 14 years of the evaluated postgraduate program, great focus was given to research, mainly including epidemiological and pathophysiological clinical research. Operational research was also emphasized, which aimed at optimizing and innovating more efficient process and procedures for application and dissemination at a short term. The investigation about the usage of biomaterials aimed at meet the social, scientific and technologic relevance of the professional training processes. The respective projects were described in their proper field, including students and advisors, with their matching lines of research. This distribution was made in line with the enrollment of students in the respective areas of concentration. The master's program had four areas of concentration represented by Stomatology, Ontological Clinic, Periodontics and Implantology. The lines of research included Diseases of the Stomatognathic complex, Modulating Factors of Inflammation and Tissue Repair Processes, Restorative Biomaterials in Oral Rehabilitation, Etiology, Diagnosis and Treatment of Periodontal and Peri-implant

Diseases, Periodontal Medicine and Biomorphofunctional Aspects of Osseointegration and Prosthetic Rehabilitation.

It is known that, in Brazil, the concept of postgraduate studies (PG) originated in the 1970s from the First National Postgraduate Plan (1975-1979) which regulated the *stricto sensu* modality and sought to meet the demand of universities to qualify their professors. Therefore, the initial goal for postgraduate programs was to develop specialized human resources for teaching activities, research and extension, such as the development of techniques related to serving users of both public and private sectors<sup>10</sup>. In this context, the professional master's program was implemented in Brazil in the 1990s, under the name "professionalizing master's degree" and recently it received its latest regulation through a Normative Ordinance N 17, December 28th 2009. According to CAPES Ordinance N 131 (2017)<sup>6</sup>, Professional Master's degree is a *stricto sensu* postgraduate modality related to training professionals in several areas of knowledge through the study of techniques, processes or ways of meeting demands from the labor market.

Around 23 years after the making of the first professional master's course, a notable increase of the number of courses in this modality was pointed out<sup>4, 10</sup>, especially in health care field, throughout Brazil. Currently, there are 24 professional master's courses in Odontology distributed throughout national territory, with

significant concentration in Southeast region<sup>7</sup>. Given that the main goal of the professional master's programs is to develop specialized human resources to meet specific demands of society in which they are part of, it is considered opportune to carry out this study to evaluate the profile of graduates in professional master's degree in Odontology from a private institution.

In the present study, it was verified that there are more female graduates than male ones. This data reflects the reality in bachelor's programs and *lato sensu* postgraduate studies in Odontology in Brazil, where approximately 55,7% of dental surgeons are females<sup>12</sup>.

Professional master's degree allows a broad professional development related to training and technical-scientific production, guaranteeing to the graduates training as a researcher aimed at obtaining practical knowledge and its applicability in professional daily life<sup>13</sup>. As a matter of fact, according to André and Príncipe (2017)<sup>14</sup>, researches have an important role in the training of professional masters, because it ends up providing opportunities for critical analyses of reality in which they are inserted and identifying imposed necessities by the labor market. It is known that 86,5% of the participants in this study reported to have published the results of their researches and 77% have elaborated some sort of technical-technological product.

It is important to highlight that the search for the continuous learning process was notable in this study. André (2017)<sup>9</sup>, corroborated this finding and highlighted the importance of the subject's active involvement in the knowledge appropriation process, such as the creation of collaboratives collectives that allow the joint construction of new knowledge which end up generating significant results by the end of a professional master's course. Thus, it was evident

through this study that the majority of graduates reported to have produced bibliographic content in their practical experience. According to Ambrosetti and Call (2016)<sup>13</sup>, researches in professional master's programs must embrace a dual dimension in education, seeking to improve knowledge in each professional field that aims to meet social and organizational demand from labor market.

The greatest goal of professional master's programs is to enable graduates for qualified and transforming training, providing professional prominence. The intense search for this modality happened because of the great appreciation for professional masters by part of public and private sectors, as besides the specialization in an area of activity, it is expected that the graduates acquire specific knowledge to transform and improve society<sup>15</sup>. Throughout its existence, the postgraduate program pointed out as object of investigation in this study contributed to the qualification of human resources in the professional field of Odontology, especially based on the technical-scientific and humanistic development of the profession and the raise of the level of attention to the health needs of the Brazilian population, such as the socioeconomic and cultural development of the country. One of the main goals was to prepare professionals for interdisciplinary team work with a comprehensive approach to health in its biopsychosocial aspects, through the implementation of interdisciplinary and cross-sectional actions, learning methodology based on problems and the ability to evaluate scientific evidence.

In addition, the professional master's course in Odontology aimed at developing a human resources qualified program, based on scientific evidence supported by the trio research, teaching and extension and training students for teaching

and health care; developing the ability to research independently and originality and adding new knowledges to the professional field; promoting technical and scientific production and its clinical performance, creating products and contributing to the repercussion of these actions in undergraduate programs and in the care of less assisted communities, benefiting an entire society and contributing to humanistic scientific and technological development of dental profession.

This exchange between the graduates and the program is continuous and long-lived, as it represents a knowledge load absorbed and applied through two years, which improves the professional to join the labor market, guaranteeing continuing education that perpetuates throughout the professional careers. According to Zaidan *et al.* (2018)<sup>15</sup>, researches in professional master's programs must turn the students into practical researchers and liberal professional to critically analyze situations in their work field, but at the same time to be understandable and to take the road of evolution. Therefore, the professional master's degree is a postgraduate modality which enables a qualified development to the graduates and assures a new and more comprehensive dimension in a higher education path. Thus, it provides the development of a more critical and grounded view, stimulating the graduates to produce professional teachings that reflect in their practice<sup>9</sup>.

It was observed in this study an interest in the search for expansion of foreign language knowledge, since 64,8% of the graduates affirm they have improved their English. The mastery of a foreign language becomes an indispensable factor in this modality, considering the graduates seek to produce bibliographic content to be published by the end of the course. Most of the articles found in research platforms are in English,

which has more influence and prevails in publications, as it embraces a wider audience of readers and consequently obtains more viewers<sup>16</sup>.

In this study, it was observed that a vast number of graduates joined teaching activities and this result from the Professional Master's course in Odontology at Bahiana School of Medicine and Public Health might be related to the latest CAPES Ordinance N 131 (2017) which clearly defined the goals of this modality. This course started in 2006 and during many years professional master's programs were evaluated in similar ways as the academic master's programs, so the greatest emphasis has always been directed towards bibliographic production and admission to teaching. Teaching activities and professional master's programs are elements entirely linked by the challenge of teaching. Graduates seek for teaching training in professional master's programs, once it guarantees, in each specific field, a total domain of knowledge and technical execution. With that being said, the field of teaching results from a professional master's degree, which seeks to align research and practical experience, turning the learning process more useful and necessary to the development of a scientifically consistent education system<sup>15</sup>. The crucial factor to the creation of professional master's programs is the gap between research and practice, besides the need to qualify professionals to solve existing problems. According to Heemann *et al.* (2016)<sup>8</sup>, the professional practice of a professor is diverse and it may suffer political, social and cultural interferences, so it can be analyzed by different point of views. It is important to observe the challenges of practice to understand them and evolve theoretical aspects, converging in the elaboration of action projects/educational products that result in practical changes and in

professional development. This qualified professional experience is a decisive factor for the graduates to join teaching activities, as perceived in this study, where 62,1% of the participants decided to join teaching activities in higher education institutions.

One of the fundamental targets of the graduates from a postgraduate program who teach is the exercise of critical and reflexive teaching practice, considering that professional master's courses aim at a spotlight in teaching activities in the perspective of using active and participatory training methods, whether in the public or private sector. Both private and public institution seek, through hiring these professionals, reach the highest level of technical/technological production, which develops applications for existent basic or strategic knowledge, allowing the target audience to go through reference training, due to the technically qualified education system<sup>8</sup>. According to the results of this study, it was identified a higher number of hiring these professionals by private institutions, 36,5% adherence to the jobs, meanwhile in public institutions this number stopped at 25,6%. Furthermore, some graduates mentioned joining in teaching activities in institutions from both administrative categories.

Besides the questions about the graduates joining teaching activities, this study also raised questions about their insertion in labor market, highlighting services for the public health care system. These services were distributed between municipal, state and federal services, where the municipal one was the most representative, probably due to the higher turnover of dental surgeons with annual contracts. According to the Ministry of Education (2010)<sup>11</sup>, the professional master's degree has a huge social responsibility to the public health care system since it adds a

commitment to the training of human resources for the advancement of health education through the Unified Health System (SUS) strengthening. It also contributes to the development of interventions through researches realized at health care services that would result in a positive effect on SUS<sup>18</sup>.

Among the limitations of this study, it is important to highlight the difficulty to contact the graduates, not only due the COVID-19 pandemic, but also due to the need for a collaborative attitude from the respondents. It is noticed that more data could have been collected in order to expand the profile analysis of the graduates. However, the application of longer forms could have been an even greater challenge to collect data.

## 5 CONCLUSION

The results of this study demonstrate that the graduates from the Professional Master's course in Odontology at Bahiana School of Medicine and Public Health managed to join the society of Bahia state in an outstanding way. Most of the graduates can be treated as qualified human resources for teaching, researching and technical activities with meaningful participation in both public and private sectors. It is concluded that the professional master's degree provided technically qualified training, characterized as an advanced and transformative practice.

## RESUMO

### **Perfil técnico-científico de egressos de um Mestrado Profissional em Odontologia: estudo de corte transversal**

Atualmente tem havido uma crescente demanda por mestrados profissionais. Contudo, o impacto desta modalidade de pós-graduação *stricto sensu* na sociedade ainda tem sido pouco avaliado. O presente estudo objetivou caracterizar o perfil dos egressos de um mestrado profissional em Odontologia de uma instituição de ensino



superior privada, acerca da sua inserção no mercado de trabalho, qualificação e produção técnico-científica. Tratou-se de um estudo retrospectivo, de corte transversal, de caráter censitário. Foram utilizadas como estratégias de busca dos egressos as redes sociais, número de telefones fixo e móvel, e-mail pessoal e institucional. Para coleta de dados foi utilizado um questionário semiestruturado elaborado pelos pesquisadores, nos formatos físico e eletrônico que foram organizados em uma tabela unidimensional de frequência, a partir da qual foram identificados os seus respectivos percentuais. Foi constatado que 71,8% dos egressos responderam aos questionários enviados. A maioria dos egressos conseguiu se inserir no mercado de trabalho de forma destacada, pois 62,1% destes ingressaram em atividades relacionadas à docência. Cerca de 86,5% publicaram a sua pesquisa sob a forma de artigo científico, além das produções técnicas destacadas, como apresentações de trabalho em congressos, entrevistas, textos informativos em websites e cursos ministrados. Constatou-se a participação em atividades do setor público e privado, com percentuais de 43,2% e 56,8%, respectivamente. Conclui-se que o perfil dos egressos do mestrado profissional em Odontologia avaliado neste estudo foi caracterizado por ampla participação em atividades relacionadas à docência, assim como em pesquisas e trabalhos técnicos, com participação significativa nos setores público e privado. Essa modalidade de pós-graduação propiciou ao egresso uma formação tecnicamente qualificada, caracterizando-se como uma prática avançada e transformadora.

**Descritores:** Educação de Pós-Graduação em Odontologia. Ensino Superior. Capacitação Profissional.

## REFERENCES

1. Aslam S, Delgado-Angulo EK, Bernabé E. Perceived learned skills and professional development of graduates from a master in dental public health program. *Eur J Dent Educ*. 2017;21(1):1-5.
2. Brasil. Portaria N° 80, de 16 de dezembro de 1998. Dispõe sobre o reconhecimento dos mestrados profissionais e dá outras providências. *Diário Oficial da República Federativa do Brasil*. 1999 jan. 11; Seção I. p 14.
3. Buunaaisie C, Manyara AM, Annett H, Bird EL, Bray I, Ige J, et al. Employability and career experiences of international graduates of MSc Public Health: a mixed methods study. *RSPH*. 2018;160:62-9.
4. Cirani CBS, Campanario MA, Silva HHM. A evolução do ensino da pós-graduação senso estrito no Brasil: análise exploratória e proposições para pesquisa. *RAIES*. 2015; 20(1):163-87.
5. Brasil. Portaria N° 60, de 20 de março de 2019. Dispõe sobre o mestrado e doutorado profissionais. *Diário Oficial da União*. 2019 mar. 56; Seção I. p 26.
6. Brasil. Portaria N° 131, de 28 de junho de 2017. Dispõe sobre o mestrado e doutorado profissionais. *Diário Oficial da União*. 2017 jun. 30; Seção I. p 17.
7. Ministério da Educação. Relatório de avaliação quadrienal. São Paulo, 2017.
8. Grassi MH, Marchi MI, Schuck RJ, Martins SN. Docência em mestrado profissional: registros de percepções e práticas em (re)construção. *RBE*. 2016; 21(66):681-98.
9. Andre MEDA. Mestrado profissional e mestrado acadêmico: aproximações e diferenças. *Rev Diálogo Educ*. 2017; 17(53):823-41.
10. Silva PAD, Del Pino JC. O Mestrado Profissional na área de ensin Holos. 2016; 32(8):319-35.
11. Ministério da Educação. Recomendações para projetos de mestrados profissionais em ensin na saúde. CAPES. Brasília, 2010.
12. Conselho Federal de Odontologia. Estatísticas. Quantidade Geral de Cirurgiões-

- Dentistas Especialistas. [Cited May 12, 2021]. Available from: <https://website.cfo.org.br/estatisticas/quantidade-geral-de-cirurgioes-dentistas-especialistas/>.
13. Ambrosetti NB, Calil AMGC. Contribuições do Mestrado Profissional em educação para a formação docente. *Rev Reflexão Ação*. 2016; 24(3):85-104.
  14. André M, Princepe L. O lugar da pesquisa no Mestrado Profissional em Educação. *Educ Rev*. 2017; 63:103-17.
  15. Zaidan S, Ferreira MCC, Kawasaki TF. A pesquisa da própria prática no Mestrado Profissional. *Plurais Rev Multi*. 2018; 3(1):88-103.
  16. André MEDA, Pereira R, Príncipe LM, Aranha EG. Tutoria acadêmica no Mestrado Profissional: um aprendizado compartilhado. *FAEEBA*. 2016; 25(47):37-50.
  17. Pinheiro IAG, Noro LRA. Egressos de Odontologia: o sonho da profissão liberal confrontado com a realidade da saúde bucal. *Rev ABEN* 2016; 16(1):13-24.
  18. Vilela RQB, Batista NA. Mestrado Profissional em Ensino na Saúde no Brasil: avanços e desafios a partir de políticas indutoras. *RBPG*. 2015; 12(28):307-31.

**Correspondence to:**

Alena Ribeiro Alves Peixoto Medrado  
e-mail: [apmedrado@bahiana.edu.br](mailto:apmedrado@bahiana.edu.br)  
Escola Bahiana de Medicina e Saúde Pública  
Avenida Silveira Martins, 3386, Cabula  
41000-000 Salvador/BA Brazil