

# Is the profile of Dental students compatible with the Brazilian public health service?

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Received June 19, 2018. Approved June 21, 2019.

## ABSTRACT

Researchers around the world study the expectations, in the short and long term, of students attending the last year of undergraduate studies in order to seek scientific evidence to assist managers and policy makers in public health service. The objective of this study is to determine the demographic and socioeconomic profile of the students of the last year of a Brazilian public Dentistry university and to relate their professional perspectives with personal, family characteristics. A cross-sectional study was carried out and a questionnaire was applied to students from the last semester of 2014, 2015 and 2016, at University of São Paulo. The response rate was 82%, and 76.52% of the students lived with their parents. Most of them (82%) studied in private schools in the elementary and high school education and only 7.95% entered into university being benefited by the quota programs. Regarding expectations concerning the professional future, 70% intend to work as self-employed professionals, 61.36% in the public service and only 28.7% intend to work in education. This was an exploratory study, with the limits described in the literature on the methodological approach. However, future researches should incorporate qualitative methodologies in order to deeply understand phenomena such as the professional expectation, the student relation with the Brazilian Unified Health System (SUS) and the labor market.

**Descriptors:** Human Resources for Health. Dental Surgeons. Brazilian Unified Health System.

## 1 INTRODUCTION

The Global Forum on Human Resources for Health<sup>1</sup> (HRH) stated that "*there is no health system without human resources*"<sup>1</sup>, so planning and health care policies should consider the personal characteristics and expectations of the students regarding their entry into the labor market, in order to ensure a decision-making supported by scientific evidences, in order to regulate a country's HRH stocks.

The Brazilian Unified Health System (SUS) is a universal health system, financed by taxes, that serves more than 200 million inhabitants, in a scenario of great locoregional inequalities. In Brazil, the professional can choose his/her workplace and whether he/she will provide services to the public or private system, reminding that the mixed practice (public and private) is a reality throughout the national territory, resulting in conflicts of interest that may compromise the quality of the service provided in the SUS<sup>2,3</sup>. Since the creation of the SUS, discussions about the curricula of the health professions, and how to adapt them to qualify professionals able to work in this system in an integral and equitable way, emerged<sup>4</sup>.

In 2004, the National Oral Health Policy was created, called Smiling Brazil, resulting in an increased number of dental surgeons being hired in the public system. In 10 years, only in primary care, this number increased more than 60%<sup>5</sup>, placing the SUS as a concrete possibility of professional practice to the Brazilian dental surgeon. Researchers worldwide study the expectations, in the short and long term, of students attending the last year of undergraduate studies in order to seek scientific evidence to assist managers and public policy makers to plan their actions regarding HRH<sup>6</sup>. Particularly in Dentistry, we

highlight the studies by Gallagher *et al* (2009)<sup>7</sup>, Baharvand *et al* (2011)<sup>8</sup>, Rashid *et al* (2013)<sup>9</sup>, however, few Brazilian studies on the subject relate the issue of the newly undergraduates to this new market approach, focusing on the public health system<sup>10-12</sup>.

In this context, the objective of this study is to determine the demographic and socioeconomic profile of the students attending the last year of the Dentistry course in a Brazilian public university and to relate their professional perspectives with personal, family and school history, thus enabling discussions that collaborate with situational diagnosis and construction of evidence in the Dentistry information process.

## 2 METHOD

A cross-sectional study was conducted to evaluate 3 dimensions related to the students: i) personal characteristics; ii) educational trajectory; iii) professional choices in the short and long term. In some questions, the students could mark more than one alternative.

The questionnaire was applied to students attending the last semester in the Management and Planning in Dentistry discipline in 2014, 2015 and 2016 in the Faculty of Dentistry of the University of São Paulo (FOUSP). The University of São Paulo (USP) is located in the urban area of the major higher education and research institution in Brazil. It is a free public institution on which the students are selected by an entrance exam.

The questionnaire used was elaborated by a group of researchers from the Observatory of Human Resources in Dentistry (PAHO / Brazilian Ministry of Health) in 2013, in order to contemplate the specific characteristics of Brazilian students. This instrument was tested and adjusted prior to the research based on the information and suggestions by the participants

and researchers who conducted these tests (pilot), as well as in the focus groups<sup>13</sup> and the interviews conducted by the last of this article's authors which directed its elaboration.

Descriptive and univariate analyses demonstrated the study findings and sample characteristics. The chi-square test was used to examine the association between the intention to undergo the public selection process and to migrate to the interior of the country and the different variables studied in the research. For all the tests, the adopted significance was  $p$  less than 0.05 (5% level of significance), and all the analyses were performed using SPSS version 20.0 (Chicago, IL, USA). This research was approved by the University of São Paulo's Ethics and Research Committee under no. 754068 (CAAE 35560314.1.0000.0075).

### 3 RESULTS

The findings of this study will be presented according to the adopted analysis categories, i.e., i) personal characteristics of the students, ii) educational trajectory, and finally, iii) expectations regarding the professional future.

#### i) Personal Data of students

The questionnaire response rate was 82% and the sample was composed of 264 volunteers, being 68% ( $n = 179$ ) female and 32% ( $n = 85$ ) male subjects, with an average of 24.4 years old. In the final year of undergraduation, 76.52% ( $n = 202$ ) lived with their parents / guardians and in 90.9% their housing was funded by their parents / guardians ( $n = 240$ ), regardless of whether or not they lived with them.

Regarding the socioeconomic profile, 44.31% ( $n = 117$ ) of the students' parents are undergraduated and 32.5% [ $n = 86$ ] have a

graduation degree. Regarding the previous studies, 82.95% ( $n = 219$ ) studied in private schools particularly in the elementary school and 82.58% ( $n = 218$ ) in high school. Only 7.95% ( $n = 21$ ) of them enrolled the University through the minorities recruitment program (table 1).

#### ii) Educational trajectory

During undergraduation, 84.8% ( $n = 224$ ) of the students had the dental material required to attend the clinical disciplines, funded by their parents / guardians. Out of the respondents, 41.28% ( $n = 109$ ) believe that only undergraduation would provide them with adequate possibilities to enter the labor market (table 2).

#### iii) Expectations regarding the professional future

Table 3 shows that most of the students (98.4%  $n = 260$ ) report that they intend to work in the Dentistry area, and 70% ( $n = 185$ ) state they wish to exercise their profession in private practice, 61.36% ( $n = 162$ ) in public institutions, 43.9% ( $n = 116$ ) in private companies, 28.7% [ $n = 76$ ] in the teaching area and 58.71% [ $n = 155$ ] intend to work in health insurance companies or cooperatives. Regarding the income expectation, 34.46% ( $n = 91$ ) expect to earn between 5 and 7 national Minimum Wages after 1 year from undergraduation and 41.66% ( $n = 110$ ), between 10 and 20 national Minimum Wages after 5 years from undergraduation.

With respect to the graduate courses, 74.24% ( $n = 196$ ) intend to refresh or attend short term courses, 60.6% ( $n = 160$ ) specialization, 31.43% ( $n = 83$ ) courses with up to 7 days of length, 31% ( $n = 82$ ) Master's degree, 7.57% ( $n = 20$ ) Doctor's degree and 2.65% ( $n = 7$ ) post-Doctor's degree.

Table 1. Sample characteristics

Variable	N	%
<b>1. Gender:</b>		
a. Male	85	32.00
b. Female	179	68.00
<b>2. Place of birth:</b>		
a. São Paulo/Greater São Paulo	230	87.12
b. Other	34	12.88
<b>3. Currently living in:</b>		
a. São Paulo/Greater São Paulo	259	98.11
b. Other	5	1.89
<b>4. Lived with parents:</b>		
a. Yes	202	76.52
b. No	62	23.48
<b>5. Housing financed by parents:</b>		
a. Yes	240	90.09
b. No	24	9.08
<b>6. Higher degree of the parents education:</b>		
a. Illiterate	1	0.37
b. Complete Elementary Education	8	3.03
c. Incomplete Elementary Education	11	4.07
d. Complete High School Level	24	9.09
e. Incomplete High School Level	2	0.75
f. Complete Technical Education	13	4.92
g. Incomplete Technical Education	2	0.75
h. Undergraduate	117	44.31
i. Graduate	86	32.50
j. Information unknown	-	-
<b>7. Studied Elementary education in:</b>		
a. Private school	219	82.95
b. Public school	44	16.67
c. Did not answer	1	0.38
<b>8. Studied High school education in:</b>		
a. Private school	218	82.58
b. Public school	45	17.05
c. Did not answer	1	0.38
<b>9. Joined University through the minorities recruitment program:</b>		
a. Yes	21	7.95
b. No	242	91.67
c. Did not answer	1	0.37

Table 2. Educational trajectory of the students

Variable	N	%
<b>10. The material used during the undergraduate program was funded by:</b>		
a. Parent / guardian	24	84.8
b. Myself	25	9.46
c. Family	9	3.40
d. Spouse	2	0.75
e. Other	4	1.51
<b>11. Consider that only undergraduate studies will enable appropriate conditions for their inclusion in the labor market:</b>		
a. Yes	109	41.28
b. No	142	53.70
c. Not applicable	12	4.54
Did not answer	1	0.37

Table 3. Expectations with respect to the student's professional future

Variable	N	%
<b>12. Do you intend to work in the Dentistry area?</b>		
a. Yes	260	98.48
b. No	4	1.51
<b>13. Intend to work:</b>		
a. In self-owned office/clinic	185	70.00
b. In public institutions (Basic Health Unit, CEO, Hospitals)	162	61.36
c. In a private company in the Dentistry sector	116	43.93
d. In the teaching area	76	28.78
e. Other	7	2.65
Did not answer	3	1.13
<b>14. Do you want to work in a health insurance company or cooperative?</b>		
a. Yes	155	58.71
b. No	91	34.46
c. Not applicable	25	9.46
Did not answer	3	1.13
<b>15. Do you intend to participate in a selective process to public service?</b>		
a. Yes	202	76.51
b. No	57	21.59
Did not answer	5	1.89
<b>16. Income expectation after 1 year from undergraduation (consider average monthly earnings):</b>		
a. 0 to 2 national minimum wages	3	1.13
b. 2 to 4 national minimum wages	42	15.90
c. 4 to 5 national minimum wages	73	27.65
d. 5 to 7 national minimum wages	91	34.46
e. 7 to 9 national minimum wages	34	12.87
f. 10 to 20 national minimum wages	17	6.43
g. Above 20 national minimum wages	2	0.75
h. Not applicable	2	0.75
<b>17. Income expectation after 5 years from undergraduation (consider average monthly earnings):</b>		
a. 0 to 2 national minimum wages	-	-
b. 2 to 4 national minimum wages	1	0.37
c. 4 to 5 national minimum wages	5	1.89
d. 5 to 7 national minimum wages	27	10.22
e. 7 to 9 national minimum wages	65	24.62
f. 10 to 20 national minimum wages	110	41.66
g. Above 20 national minimum wages	49	18.56
h. Not applicable	6	2.27
<b>18. Intent to attend a graduate program up to 1 year after the undergraduate program:*</b>		
a. Courses up to 7 days of length	83	31.43
b. Specialization	160	60.60
c. Update or other short term courses	196	74.24
d. Master's degree	82	31.00
e. Doctor's degree	20	7.57
f. Post-Doctor's degree	7	2.65
g. Others	15	5.68
<b>19. Would you be willing to exercise Dentistry in rural areas, small towns or peripheral areas of big cities?</b>		
a. Yes	161	60.98
b. No	45	17.04
c. I don't know	56	21.21
Did not answer	2	0.75

(to be continued)

(continuation)

<b>20. If you answered No / I do not know for the previous question, what would prevent you from doing so?</b>		
a. Unsuitable working conditions	45	44.55
b. Affective bonds (such as family, boyfriend/girlfriend, friends)	72	71.28
c. Believe that in big cities the salary is higher	14	13.86
d. Used to a big city's infrastructure	48	47.52
e. Believe that the quality of life in big cities is better	11	10.89
f. Was born in a big city and have no reason to move	33	32.67
g. Stable job	19	18.81
h. Never thought about it	16	15.84
i. Other	3	2.97
Did not answer	2	1.98
<b>21. Regardless of your answer in question # 19, what income would you be willing to earn?</b>		
a. 0 and 2 NMW	-	-
b. 2 and 4 NMW	7	2.65
c. 4 and 5 NMW	17	6.43
d. 55 and 7 NMW	40	15.15
e. 7 and 9 NMW	52	19.69
f. 10 and 20 NMW	67	25.37
g. Above 20 NMW	53	20.07
h. None	16	6.06
i. Not applicable	7	2.65
Did not answer	3	1.13

Among the analyzed students, 76.51% (n = 202) intend to access the public service in the Dentistry area and when asked about the possibility to work in rural regions, small cities or in the big cities' periphery 60.98% (n = 161) would be willing to migrate to such regions. Those who marked the options do not or do not know (38.25%; n = 101), would not go for considering that in these regions the working conditions are not appropriate (44.55%; n = 45), for having affective bonds (71.28%; n = 72), for believing that in big cities the salary is higher (13.86%; n = 14), for being used to the infrastructure of a big city (47.52%; n = 48), for believing that the quality of life in big cities is better (10.89%; n = 11), for being born in a big city and have no reasons to move (32.67%; n = 33), for having a stable job (18.81%; n = 19), for never

having thought about it (15.84%; n = 16).

Regardless of the answer to this question, 25.37% of them (n = 67) would be willing to work in these areas for an income between 10 and 20 national minimum wages.

The statistical tests revealed statistically significant differences between the sample of volunteers who would be willing to undergo a public selection process and those students who would be willing to work in rural areas, small cities and big cities' periphery (p<0.05). The male gender showed to be in the significance threshold for the same outcome variable (p=0.06). When the outcome variable was to work in rural areas, it was noted that the gender and undergo a public selection process variables were statistically significant (p=<0.05) (tables 4 and 5).

Table 4. Distribution of the sample number and ratio (%) according to the intent to undergo a public selection process after undergraduate

Variable	Categories	Yes		No		Total	p of $\chi^2$
		N	%	N	%		
Gender	Female	179	67.8	85	32.2	100.0	0.06
	Male	85	32.2	179	67.8	100.0	
Place of birth:	São Paulo/ Greater São Paulo	230	87.12	34	12.88	100.0	0.53
	Other	34	12.88	230	87.12	100.0	
Living in:	São Paulo/ Greater São Paulo	259	98.11	5	1.89	100.0	0.88
	Other	5	1.89	259	98.11	100.0	
Living with parents/ guardians		202	76.52	62	23.49	100.0	0.82
Elementary study in:	Private school	219	82.95	45	17	100.0	0.49
	Public school	44	16.67	220	83.33	100.0	
	Did not answer	1	0.38	263	99.62	100.0	
High school in	Private school	218	82.58	45	17	100.0	0.44
	Public school	45	17	219	82.96	100.0	
	Did not answer	1	0.38	263	99.58	100.0	
Joined University by minority recruitment program:		21	7.95	242	91.67	100.0	0.84
Willing to work in rural areas, small cities or big cities' periphery		161	60.98	103	39	100.0	0.00

Table 5. Distribution of the number and ratio (%) of the sample that would accept to work in rural areas, small cities or big cities' periphery

Variable	Categories	Yes		No		Total	p of $\chi^2$
		N	%	N	%		
Gender	Female	179	67.8	85	32.2	100.0	0.05
	Male	85	32.2	179	67.8	100.0	
Place of birth:	São Paulo/ Greater São Paulo	230	87.12	34	12.88	100.0	0.41
	Other	34	12.88	230	87.12	100.0	
Living in:	São Paulo/ Greater São Paulo	259	98.11	5	1.89	100.0	0.17
	Other	5	1.89	259	98.11	100.0	
Living with parents/ guardians		202	202	76.52	62	23.49	100.0
Elementary study in:	Private school	219	82.95	45	17	100.0	0.65
	Public school	44	16.67	220	83.33	100.0	
	Did not answer	1	0.38	263	99.62	100.0	
High school in	Private school	218	82.58	45	17	100.0	0.87
	Public school	45	17	219	82.96	100.0	
	Did not answer	1	0.38	263	99.58	100.0	
Joined University by minority recruitment program:		21	21	7.95	242	91.67	100.0
Intend to undergo a public selection process		161	202	76.81	57	21.67	100.0

#### 4 DISCUSSION

The response rate of this research was high compared to the existing literature on the profile and insights of students and health professionals<sup>14,15</sup>, strengthening the conducted analyses. The fact that the questionnaire was applied in a management discipline allowed the students to think over the world of work and career

planning, once this transition phase is challenging and the university has the role of providing guidance, promoting curricular moments which consider this important demand.

The undergraduate student is considered as an important workforce in the health system, so career planning requires extensive discussion in teaching, in order to prepare the student for the

labor market and for the health care systems' needs<sup>16</sup>.

It was noted that the main student's profile comes from private schools, comprises females, is economically dependent on their parents who, in their turn, are undergraduates, and that the students, mostly come from private schools. Although this is a reality imposed in Brazil, the quota system has been expanded and needs to be discussed under the perspective of the democratization of the access to Dentistry courses for low-income students, once that in common with this study, other researchers showed the elitism in the faculty of Dentistry in Brazil, especially in public universities<sup>17,18</sup>. Previous studies point out the importance of the cultural and social diversity of future health professionals to correct the inequalities in the health access, since it is recognized that students with lower purchasing power are more likely to work with populations with greater social vulnerability<sup>19,20</sup>.

According Ministry of Education<sup>21</sup>, in Brazil there are currently 378 active Dentistry courses, being 47 in public institutions and 331 in private institutions and, in addition, a significant growth in number of graduate courses. The Brazilian students demonstrated the expectation of attending a graduation course, as well as a high monthly earning with Dentistry. In India, 54.4% of the undergraduates from private universities in the capital have shown an interest in specialization courses following undergraduate studies and 26.6% in working in the private sector; when the public sector was mentioned, 33.5% showed to be interested, but 58.2% showed neutrality<sup>22</sup>. Regarding income, some studies show that financial stability is a frequent factor among the expectations concerning dental career<sup>7,9,23</sup>. The Dentistry student's view, idealizing a specialized professional and with an income above the national average, shows that the universities have important gaps to be worked with the students concerning the

reality of the labor market and the population's needs. It is necessary to change the paradigm for the valuation of the family health, particularly directed towards the Primary Health Care, with the required profile and skills to meet the health demands of the population<sup>24</sup>.

These issues and disagreements regarding the labor market are relevant due to the phase through which Dentistry is facing in Brazil, i.e., a moment when the public service has strongly grown, but the newly undergraduates still have desires and expectations to act in the private office/clinic<sup>25</sup>. In this study, the data shows that most of the students also intend to undergo a public selection process. In face of this and the health disparities in Brazil, scholars point out the need for regulatory policies which create a synergy between undergraduation and the labor market, noting that these two ones cannot be planned without each other, regardless of the legal nature of the institutions. Whether they are public or private, the focus should be the relevance of the actions carried out and adequacy to the social need<sup>26</sup>.

Certainly, the results of this research allow a reflection concerning the conflicts existing between the mixed practice and the need for new researches to progress in the understanding this phenomenon identified in the study, because there are still many gaps to be explained, such as, for example, the financial income of the dental surgeon in the public service and in the private service. The double practice is accepted and practiced in several countries, including Brazil, however, there are important evidences suggesting a possible reduction of the accessibility and quality for users of the public health system. An interesting aspect which deserves attention is the fact that our students demonstrate their desire to specialize and update themselves after undergraduation, and at the same time to work in the public service, a profile that may qualify the service and guarantee the necessary care to the user. However, the SUS must



be prepared to receive this motivated professional and willing to qualify himself/herself so that this aspect does not get lost over the years. Permanent education policies must meet this demand for human resources in health, without losing focus on the qualification of a general practitioner, as indicated by the National Curricular Guidelines (DCN) and SUS itself. Once again, the importance of the university towards the professional career of the students is emphasized so that the education results in a professional who recognizes the reality and who wishes to work in the SUS so as to contribute to their strengthening and growth<sup>21</sup> and does not wish to join the public service only at the beginning of his/her career, while qualifying himself/herself to later work in the private sector as a specialist.

The problems of the regional imbalance of professionals and the lack of access to Dentistry in the public sector, combined with the results of this study, show that most of the students would be willing to exercise Dentistry in rural areas, small towns or in big cities' periphery, point out that there is a need to improve the management of this large contingent of professionals by the competent bodies<sup>27</sup>. The approximation of the academy with management in order to regulate these axes and reduce the disparities could contribute to solve the labor market and public health problems, also resulting in professionals who are more satisfied, motivated and committed to SUS principles. Considering this window of opportunity to change the reality of the country is urgent, reducing the disparities of access, from the offer of public selection processes where there is a shortage of professionals, is a real and viable possibility for the country, as well as other options that have already been identified in the literature, but which have not been implemented by oral health policy makers yet<sup>28</sup>.

This was an exploratory study, with the limits described in the literature on the

methodological approach, however, future researches should move forward in the analyses and incorporate qualitative methodologies in order to deeply understand the phenomena such as the professional expectation, the student relation with SUS and the labor market.

## 5 CONCLUSION

The profile of the undergraduate student of the Faculty of Dentistry of FOU SP is mainly female, young (mean age of 24 years), coming from a private school and financially dependent on the parents / guardians who, in their turn, have complete higher education. In relation to the professional future, the majority intends to work in his/her own practice, but also intends to undergo a public selection process. Among the evaluated students, 60.98% would accept to work in rural areas of the country, and the 39.02% who would not accept so indicated factors related to worse work conditions and the rural lifestyle as justifications. However, 25.37% of the students would be willing to work in these regions for an income between 10 and 20 minimum wages. In the sample, the male students who intend to undergo a public selection process were more likely to work in the rural area. Universities should take the students' expectations and changes to the labor market into account to prepare professionals who can work in the SUS by helping to reduce inequities in access to public services.

## RESUMO

### **O perfil dos estudantes de Odontologia é compatível com o mercado de trabalho no serviço público de saúde brasileiro?**

Pesquisadores ao redor do mundo estudam as expectativas, em curto e longo prazo, dos estudantes de último ano de graduação, a fim de buscar evidências científicas que auxiliem gestores e formuladores de políticas públicas na tomada de decisão e no planejamento de suas ações no que diz respeito aos recursos humanos em saúde. O objetivo do presente estudo foi determinar o perfil

demográfico e socioeconômico dos estudantes do último ano do curso de Odontologia de uma universidade pública brasileira e relacionar suas perspectivas profissionais com características pessoais, familiares e histórico escolar. Foi realizado um estudo transversal e um questionário foi aplicado aos estudantes do último semestre nos anos de 2014, 2015 e 2016 na Faculdade de Odontologia da Universidade de São Paulo. Foi realizada a análise descritiva e o teste qui-quadrado foi utilizado para examinar a associação entre a intenção de prestar concurso público e migrar para o interior do país e as outras variáveis. A taxa de resposta foi de 82%. Dentre os estudantes da amostra, 76,52% moravam com os pais. A maioria (82%) cursou escola privada e somente 7,95% ingressou no curso por programas de quotas. Quanto às expectativas em relação ao futuro profissional, 70% pretendem trabalhar como autônomo, 61,36% no serviço público e somente 28,7% pretendem trabalhar no ensino. Este foi um estudo exploratório, com os limites descritos na literatura sobre a abordagem metodológica. Entretanto, pesquisas futuras devem avançar nas análises e incorporar metodologias qualitativas a fim de compreender em profundidade fenômenos tais como expectativa profissional, relação do aluno com o Sistema Único de Saúde e mercado de trabalho.

**Descritores:** Recursos Humanos em Saúde. Cirurgiões-Dentistas. Sistema Único de Saúde.

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