Dentistry quota students and dental instruments

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ABSTRACT
The Quota Policy for higher education in Brazil proposes to reserve vacancies for black, brown and indigenous students from public and low-income schools. The acquisition of the required instruments in the dentistry course represents a difficulty for the permanence on the course for most of these students. The objective of this study was to understand the experience of quota students regarding the acquisition and use of instruments and materials for the practical classes of an undergraduate course in dentistry. Qualitative research was conducted through semi-structured interviews with 16 students chosen at random from all years of the course, and from all quota groups according to Law 12.711 / 2012. The treatment of the data was based on the thematic modality of Content Analysis, from which three categories emerged: “Inclusion”, “Exclusion” and “Discrimination”. The support of the university community, family and colleagues appears as an inclusion mechanism, as it favors the permanence of these students, as well as the instrumental loan program for low-income students of this University. On the other hand, the program was also considered an exclusion factor because it did not offer all the requested instruments and some were of low quality. Respondents reported being discriminated against by a small number of teachers and feeling excluded when using non-standard instruments. The challenge for the researched institution is to guarantee the adequate material conditions for the education of these students, to propose strategies for the improvement of the instrumental program and to implement actions aiming at teacher development.

1 INTRODUCTION

The Quota Policy for higher education in Brazil is a type of affirmative action that proposes the inclusion of students who have historically found it difficult to enter the Federal Higher Education Institutions (IFES), especially in the most popular and generally considered most prestigious courses such as dentistry\textsuperscript{1,2}. Specifically for this course, such a policy has thrown up a difficulty for students to acquire the necessary dental instruments and material. Public reservation policies for black and public school students began to be implemented in Brazilian universities from 2002\textsuperscript{3}. The University where this research was conducted instituted a self-declared public reservation system for public school students, indigenous students and “quilombolas” (people who are descents of slaves who fled their masters and set up small independent communities) in 2009.

Law No. 12.7114 was sanctioned in 2012\textsuperscript{4}, after several experiences of quotas for higher education in Brazil and intense debates in the media, within universities and in society in general\textsuperscript{3,5}. Regarding Federal Public Universities, Law No. 12.711 / 2012 establishes that all Federal Higher Education Institutions allocate 50% of their places for students who have attended high school in public schools. It also determines that the distribution of these vacancies should consider the percentage of black, brown and indigenous people in the state where the IFES is located, in accordance with the last census of the Brazilian Institute of Geography and Statistics (IBGE), as well as family income. After Law 12.711/2012 was passed, the University's Inclusion Program continued to allocate one extra vacancy for indigenous people and one for quilombolas.

Quota beneficiaries are often disadvantaged when considering the economic, social, educational and cultural conditions with which they enter the university. Resende, Queiroz and Faria (2012)\textsuperscript{6} and the latest published research by the National Forum of Deans of Student Affairs (FONAPRACE)\textsuperscript{7} reveal the disparities among students considering the course they attend. They differ in their purchasing power and, consequently, in their ability to obtain the necessary materials, such as books, photocopies, instruments necessary for practical learning, transportation, among others. This situation is even more different when looking at the entry profile to the most popular IFES courses.

Students from families with low purchasing power face various difficulties throughout the course, such as those related to food, housing, commuting to university, academic achievement and living in the university environment\textsuperscript{8,9}.

In this sense, the demand for a costly set of instruments for the dentistry course is a challenge for the permanence of these students at the University. At the School of Dentistry (of the present study), there is an instrumental loan program for low-income students, as an institutional policy to assist student retention. This policy is subsidized by the National Student Assistance Plan (PNAES), regulated by Decree No. 7,234 of 2010\textsuperscript{10}.

Given this reality, the present study aims to understand the experience of quota students in relation to the acquisition and use of instruments and materials for practical classes of an undergraduate course in dentistry.

2 METHODOLOGY

This study took a qualitative approach, since it proposed to study the relationships, opinions and perceptions of a delimited group\textsuperscript{11}. It was held at a Faculty of Dentistry and obtained the approval of the Ethics Committee under opinion number 1,723,122. The Undergraduate Dean of the University provided a list of 162 student
beneficiaries of quotas, gender, type of quota and enrolment status, for each year from 2009 to 2017, (the year of data collection for this study). The inclusion criteria used to choose participants included being a student who entered the University Inclusion Program or under Law No. 12.711 / 2012 and be regularly enrolled in the course during the semester in which data collection took place. The exclusion criteria included: being on maternity leave, suspended enrolment or anyone subject to an exclusion process from the University. A total of 111 students were able to participate in the research.

Survey participants were randomly selected. Contact with students was via e-mail or by the instant messaging application via cell phone called WhatsApp. Initially, 17 students were contacted, drawn according to the year of the course, of which 11 agreed to participate in the research. A draw to find five students was held to balance the representativeness of quota types, year of entry, and gender, with the purpose of collecting data that addressed the plurality of the research population and student experiences in the various phases of the course. In the end, 16 participants were interviewed (table 1).

### Table 1. Number of students interviewed according to quota types

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* PI - Inclusion Program instituted by this University, for a group of students from Public Schools, Black students from Public Schools, Indigenous and Quilombolas, from 2009.
** PPI – RI - Law No. 12.711, with effect from 2012, for groups of Black, Mixed Race and Indigenous students from Public Schools, with Family Income less than 1.5 times the Minimum Wage.
*** PPI-RS - Law No. 12.711, with effect from 2012, for groups of Black, Mixed race and Indigenous students from a Public School, with a Family Income greater than 1.5 times the Minimum Wage.
**** DC-RI - Law No. 12.711, with effect from 2012 onwards, for a group of Other Competitor from the Public Schools with Family Income of Less than 1.5 times the Minimum Salary.
***** DC-RS - Law 12.711; with effect from 2012 onwards, for a group of Other Competitor from the Public Schools with a Family Income greater than 1.5 times the Minimum Salary.

The technique chosen for data collection was the semi-structured interview and the instrument used was a script designed by the researcher. The first part contained initial student identification issues such as date of birth, year of entry, self-declaration regarding race or ethnicity, schooling experiences prior to university entry, work, housing, and participation in research and extension activities.

The second part of the script contained eight questions that sought to understand the experiences lived by the students during the course. Among the various issues that emerged from the participants' responses, the instrumental and dental material issue was the one we chose to focus on for the purpose of this article.

For data analysis, we opted for the Thematic Mode of Content Analysis, according to Bardin12. Content Analysis is a set of techniques. Among them, the thematic modality is one that “addresses the characteristics of the message itself, its informational value, the words, arguments and ideas expressed in it” (p. 3)13. It provides for a method of ordering, classifying...
and categorizing the collected data until broader categories are obtained that represent all the content expressed in the collected data 14. Initially, the interviews were read and a file was created with the answers to each question from the script. Then, the most significant fragments were listed and the central ideas extracted, following the research objective. From the central ideas, core issues, nuclei of meaning, were defined. By grouping the core issues by the similarity of their content, three thematic categories emerged: “Inclusion”; "Exclusion"; "Discrimination".

The thematic category “Inclusion” refers to the actions and means that enable students successfully complete the course. This article deals with how to acquire the instruments and material required for the practical classes and the support they receive from the university community, their families and colleagues. The thematic category “Exclusion” refers to the situations, patterns and attitudes that make it difficult for respondents to stay, represented here by their socio-historical-economic-cultural conditions and the challenges and difficulties of the University in maintaining and expanding its loan program for dental instruments. The third thematic category concerns “Discrimination”, which was understood as a situation in which individuals or members of certain groups are harmed or socially disadvantaged or when others unfairly benefit from this situation 15. In this study, this category refers to the discriminatory attitudes of some teachers regarding the type of instruments used by the student.

This data categorization process was performed by the principal researcher and supervised by the master's dissertation advisors from which this article originated.

3 RESULTS AND DISCUSSION

In order to know the experience of quota students regarding the acquisition and use of instruments and materials for the practical classes of an undergraduate course in dentistry, the collected data was categorized and is presented in Table 1.

Before presenting the contents of chart 1, it was considered important to include the identification and characterization data of the participants of this research. Ten women (62.50%) and six men (37.50%) were interviewed. The age of the participants ranged from 19 to 35 years, and the average was 22.88 years. Of the sixteen interviewed, seven declared themselves to be brown (43.75%), three whites (18.75%), one indigenous (6.25%) and five blacks (31.25%), one being a quilombola black. Regarding the type of school where they attended high school, 14 students came from the state public schools, of which four studied in military schools. Two students attended high school at the Federal Institute of Education. As for housing, nine lived with their families and one reported as living with a relative. Two lived in the University Student House, two in their own home, and two lived in a place rented by the family. Half of respondents reported participating in research and extension projects.

The characterization of the interviewees reveals similarities with other research that analyzed the profile of dental students, although these studies are not with quota beneficiaries. In the accessed works, most were women, young people and single.

Toassi et al. (2011)16 investigated 360 students at the Federal University of Rio Grande do Sul (UFRGS) and found that most were single, young, childless, with a predominance of women, who had never worked, families with a high level of education and who attended private schools before entering higher education.

Ristoff (2013)17 analyzed the socioeconomic profile of the respondents of the first two cycles of the National Student Performance Exam (Enade), finding that
dentistry is among the courses with the highest proportion of white people and the lowest proportion of brown people, and with the lowest index of students from public schools. However, when considering these last two pieces of data, it should be noted that this analysis was done prior to the enactment of Law No. 12.711 / 2012. The author also found that 85% of the students in this course did not work and their expenses were funded by the family.

Chart 1. Data characterization

<table>
<thead>
<tr>
<th>Categories</th>
<th>Nuclei of meaning</th>
<th>Central Ideias</th>
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<tr>
<td>Inclusion</td>
<td>Mecanisms of Inclusion</td>
<td>Inclusion in the instrumental loan program; Involvement and help from the college board; Support from the course coordination; There is no difference in the treatment of quota holders.</td>
</tr>
<tr>
<td>Solidarity</td>
<td>Family encouragement and support; Solidarity between quota holders; Solidarity between colleagues.</td>
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<tr>
<td>Exclusion</td>
<td>Exclusion Factors</td>
<td>Constant struggle for permanence; Exclusion for the difficulty in acquiring necessary instruments; Exclusion by the condition of the instrumental loaned by the University; Exclusion by social condition; Financial difficulty; Staying on the course is harder than getting onto it.</td>
</tr>
<tr>
<td>Discrimination</td>
<td>Discrimination</td>
<td>Embarrassment around questions related to the instruments used in the course; Humiliation.</td>
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**Inclusion**

The University's dental instrument loan program, which was maintained with federal funds via PNAES10, was considered by students to be an important action towards remaining on the course. There has been joint action since 2010 between the Faculty of Dentistry and the Dean of Student Affairs (PRAE), which aims to lend the required dental instruments to students who have financial difficulty in acquiring them. PRAE social workers receive students' requests, draw their socioeconomic profiles based on interviews and required documents, and then select those to be covered by the project. At the time of data collection, seven respondents used this program. One of them said that... *if it wasn't for that program, I would have dropped out of the course* (E2) and another said that *...the rest of the instruments, everything, were provided by the college* (E5).

This type of permanence or retention policy is important and other Federal Institutes take action to encourage low-income students successfully complete their dentistry course. Similar programs can be found at the Federal Universities of Pará (UFPA)\(^1\), Maranhão (UFMA)\(^2\), and Uberlândia (UFU)\(^3\). All of these programs are funded by PNAES10 and are important retention policies for low-income students.

Respondents to the present study stated that college management, course coordination, most teachers, and administrative staff strive to guide students and seek solutions to the difficulties with acquiring and using the necessary dental instruments and materials required by the course, as in the following account: *But I've always felt welcomed like this by everyone here, both my classmates, teachers, technicians, everyone else* (E5).

Students emphasized family support throughout the course and various ways to achieve the appropriate material conditions for successful academic education.
(...) we borrow from a godmother of mine... from my grandfather... my mother takes a loan (...) and we can buy it [the instruments] (E7).

Solidarity among colleagues and especially among quota holders was also mentioned, as by this student who did not use the university loan and reported that he bought as little as possible and borrowed [from colleagues] (E13) and another who benefited by the loan program said that among quota students we help each other a lot (E2).

Mayorga and Souza (2012) mention the presence of a support network for low-income students, made up of family, friends, employers and also the various strategies used to help them complete the course. The authors also affirm the formation of a group among equals, referring to the support among the low-income scholarship holders of UFMG, which was also found among the quota students and the low-income students of this study.

Exclusion

The Dentistry course requires a long list of instruments and materials for practical classes, as well as appropriate clothing consisting of closed white shoes, white clothing and long-sleeved white coat. One respondent comments that dentistry is a course that requires a lot of money, one has to buy, buy, buy (E12), referring to the high financial value of all that is required.

Difficulties regarding the acquisition of instruments and materials begin in the early periods of the course. It is a constant concern among students from low-income families and a major challenge for 80% of respondents.

The financial cost of the course is even considered an impediment for the permanence of low-income students and for high school students when choosing dentistry. Santos et al. (2015) conducted a survey at a public university about the value of the full list of instruments and estimated a high financial investment for each student throughout the course, which corresponded in 2014 to approximately 24 times the minimum wage at that time. This investment caused a surprise to one interviewee who reported: [...] in freshman week, we had a lecture and then the teacher explained, put out a list of costs there (...) An estimate of expenses, then all parents were there and they were scared, but my parents weren't there. (...) And I remember going home and crying for fear of having to go home, drop out, because it was really a very high value (E13).

This theme is so relevant that the resources of GraduaCEO, the program that makes up the National Oral Health Policy, can be used to purchase dental instruments. The article by Morita et al (2016) presents a study by the Brazilian Association of Dental Education (ABENO) which, according to the authors, resulted in a standardized, simplified and optimized list of essential dental instruments for a dental course. Simplifying and optimizing the dental instruments required for this course tends to reduce the financial value of the whole set by acquiring what is really essential for learning. This action may contribute to the retention of underprivileged students.

In the interviews, comments on the difficulties faced by the instrumental loan program of this university are also made. Among them, one student reported that out of 100% [of the instruments], (...) you get 30%. (...) Today (...) I have 45% (laughs) (E10). They consider that the problem stems from the bureaucracy and slowness of the bidding process:

Where are the rest of the things you need, why not buy them, how difficult is it to get the specification, to get the product, to get the equipment, to get what material is necessary and send it there? (...) the money is there, there is no request, and (...) there is no one to organize the program (E8).
There are also reports of bureaucracy in accessing the program:

[... ] I don't know if it was easy, it's that paperwork, [to get the instrument provided by the university] (E5).

According to interview reports, even when covered by the loan, students in this course do not receive the complete list of items and, in addition, some instruments are already outdated or damaged.

[... ] because sometimes the materials are not of the quality that sometimes the teachers require. So you go there, pick up the material and sometimes you will do the procedure and you really find it difficult (E10).

[... ] the materials [provided by the University] are very bad, rusty, very bad, very bad! (E9).

This student's opinion is not unanimous among the interviewees, however, similar reports appeared in five other interviews (E2, E7, E8, E10, E11).

One student reported that the poor quality of certain University-assigned instruments impaired his performance while completing dental procedures in laboratory class.

[... ] But we who had something borrowed in there, something older, we had some obstacles. [Describes the difficulties in the procedure.] Then I would go through that embarrassment, and it would take ages ...delayed me. (E7).

Thus, the students contemplated for this loan program must acquire, with their own resources, what is missing to complete the list of material demands required by the teachers, as this interviewee said: Wow, when, for example, there is no instrument, we have to buy it. I have several items that I bought myself (E7).

In addition to the instruments, the course requires a large amount of consumables and disposables. Material that is not provided by the University, such as gloves and masks, must be purchased by all students of the course and they confirmed that they have to buy all disposable items (E8) and although some things we have here, only it's very limited, right? ( ... ) But we have to buy them (E7).

There are several ways and means used by students to get what they need to enjoy the learning experiences in the practical classes: I tried ( ... ), I went to dental, I bought it when I didn’t have much money and I was dividing the cost over several installments (E9); my mother received her thirteenth salary (bonus month), her 13th salary all gone (E3); we find a way, sell something (E3); We made a joint purchase together as a class, so it was cheaper (E11); Dental [dental stores] end up facilitating installments (E13).

However, the stress reported by students to acquire at least the minimum list of what they need is explicit in the following words by one student:

And so, we get it very hard because when I started classes this semester I was crazy at [Course Coordination], like, I was having class there and I had to come here to[Course Coordination], to know if I could get it, You already have it, so what will I have to do to receive it... (E8).

The question of the instruments and material required in the Dentistry course, despite all the efforts of IFES and students and family, makes it difficult to stay and figures as a factor of exclusion.

Discrimination

According to the interviewees, the demand for dental instruments generated moments of discrimination from a few of the course teachers.

Students reported that, because of their financial situation, they can only purchase inferior instruments, which cost less in specialty stores. One student reported that he has
colleagues who have a lot of financial difficulty (...) buy the cheapest (E12). They also expressed the teacher's misunderstanding, claiming that he does not understand why you cannot afford to buy (E9), a teacher in his position makes them feel discriminated against.

In practical classes, the teacher uses the student's instruments to demonstrate the dental procedures. The reports reveal an unwillingness of teachers to try different equipment than they are used to, as in the following report: Then I said: but can’t you do it with this? [instrument], he [the teacher], no, hey, so I said: wow, people if you can do it, why do they keep talking about it so much and talking too loudly (E15).

The statement reveals that the way some teachers approach students who do not meet all the requirements is a source of embarrassment for many, but in this case, according to the interviewees, they do not behave in this way with the quota students only or with those who utilize the university loan. Students are subjected to public humiliation, as teachers speak loudly when they require a specific brand or when they criticize the student's instruments, without worrying about others around them.

Cruz and Pereira (2013)27 discuss the power relations in the university environment and affirm that these define the place of the student and the teacher, the latter sitting at the top of the hierarchy. Thus, university professors intend to legitimize their values in this environment and in their relationship with students. Still according to the same authors, the university environment reproduces social relations, therefore, it stamped out the class, ethnicity and gender clashes.

In the interviews, there were repetitive reports about the teacher who reduces the students’ grade only because of the quality of the instruments used by the student, as noted in the following comment:

Now there is something in [college] that is bad, it is a student being discriminated against because of his instruments(...) and I've seen students lose grades ... (E12).

Given this reality, it is suggested to review the evaluation practices that are often repeated without reference to their purpose. Anyone who has gone through dentistry courses should remember this moment of the instrument conference. Why do we even do this? Should the absence of any item result in a decrease in the student’s grade? What learning does this practice result in training a dental surgeon? For at this moment the interviewees perceive and resent the discrimination and injustice to which they are routinely submitted to by some teachers:

If I have no instruments (...) they will not consider if I had difficulty or not to buy them, I have to have the material (...) Demand, demand the material at any cost, do you understand? (E13).

One student even stated that he changed his class because a teacher did not assist him and other colleagues who used old equipment borrowed from the University, as he did to others who had new or better equipment.

And then he [the teacher] realized that everyone had a particular brand [of dental instrument] (...) and I and two other friends, different. And then he came to us and said that they were dirty, and that the material was old, that this brand was not good ... So much so that I and another colleague changed class because we felt super repressed because of that, we felt that we were not as assisted as other people, he only did the bare minimum necessary (E7).

A study by Neves, Faro, Schmitz (2016)9 aimed to reflect on the changes that occurred at the Federal University of Sergipe, after the implementation of affirmative actions where...
there had been tensions between teachers and students. Respondents cited teachers who disqualify students who benefit from quotas, especially in elite courses. A study conducted at the Federal University of Espírito Santo (UFES) evaluated the relationship between teachers and students of dentistry and found that 65% of the students surveyed in this course said they had been reprimanded by teachers in front of patients at least once. They also reported feelings of superiority, arrogance and authoritarianism on the part of teachers and that they act with paternalism with certain students and with exclusion in relation to others.

No studies were found in the literature relating the difficulty of acquiring dental instruments and the manifestation of discrimination for this reason, as found in the reports of respondents in this study.

4 CONCLUSIONS

From the results of this research, it was found that respondents emphasized family support and the cooperation of colleagues, teachers and technical-administrative staff. Low-income students especially recognize the University's dental instrument loan program as an inclusion action that can prevent or lessen dropout rates. However, the difficulty of the University to lend all the required instruments and the low quality of some items are considered as an exclusion mechanism, because many students interviewed face daily difficulties in acquiring the instruments and apparatus considered as obligatory for the course, along with other demands related to their use and other issues such as their subsistence. In addition, respondents feel discriminated against by some teachers who do not accept the instruments they have and even take notes when an instrument is missing or it deviates from the expected quality standard.

In order for student assistance programs to reach all the students who need them, Federal Government investments such as PNAES must be maintained and expanded. It is important that the direction of the Institution take the necessary measures to ensure that the quota students are valued and have their rights in the University Community and, more specifically, by the course teachers, respected. The faculty teachers could adopt this strategy through implementing permanent education actions.

RESUMO

Estudantes de Odontologia cotistas e o instrumental odontológico

A Política de Cotas para o ensino superior no Brasil propõe a reserva de vagas para estudantes oriundos de escolas públicas, pretos, pardos, indígenas e de baixo poder aquisitivo. A aquisição do instrumental exigido no curso de Odontologia representa uma dificuldade para a permanência da maioria desses estudantes. O objetivo deste estudo foi conhecer a experiência de cotistas em relação à aquisição e uso dos instrumentais e materiais para as aulas práticas de um curso de graduação em Odontologia. Foi realizada pesquisa de abordagem qualitativa, por meio de entrevistas semiestruturadas, com 16 estudantes de todos os anos do curso, de todas as modalidades de cotas segundo a Lei 12.711/2012, escolhidos de forma aleatória. O tratamento dos dados baseou-se na modalidade temática da Análise de Conteúdo, de onde emergiram três categorias: “Inclusão”, “Exclusão” e “Discriminação”. O apoio da comunidade universitária, família e colegas figura como mecanismo de inclusão, por favorecer a permanência desses estudantes, assim como o programa de empréstimo de instrumental a estudantes de baixa renda dessa Universidade. Por outro lado, o programa também foi considerado fator de exclusão por não oferecer todo instrumental solicitado e alguns apresentarem baixa qualidade. Os entrevistados relataram sofrer discriminação, por pequena parte dos professores, e se sentirem excluídos quando utilizam instrumentos fora do padrão exigido. O desafio para a instituição...
pesquisada é garantir as adequadas condições materiais para o aprendizado desses estudantes, propor estratégias para a melhoria do programa de instrumental e implementar ações visando à capacitação docente.


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