



Socioeconomic Profile and Academic Performance of Students on Campus VIII of the State University of Paraíba, Araruna, Brazil, 2013

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Authors' contributions

This work was carried out in collaboration between all authors. Authors MRSF and OSL worked in the literature review, design and collected data. Author DJSS worked in data analysis and interpretation. Authors GGA, FDV, SHGC and PAPO revised the article and author SAM worked in the conception and design, data interpretation and revising critically the article. All authors read and approved the final manuscript.

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ABSTRACT

Aims: The aim of the present study was to analyze the socioeconomic profile and academic performance of students of three courses on Campus VIII of the State University of Paraíba.

Study Design: A quantitative, descriptive, cross-sectional study with an inductive approach was carried out involving students in the courses of dentistry, civil engineering and natural science on Campus VIII of the State University of Paraíba (northeastern Brazil) in 2013.

Methodology: A total of 321 students were enrolled, and the sample was made up of 238 participants who answered a semi-structured questionnaire addressing socioeconomic

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characteristics and academic performance.

Results: Most students were female and beneficiaries of the quota system, had a family income of more than two times the Brazilian minimum monthly wage and had a academic performance coefficient (APC) greater than 7.0. The best academic performance was found among the students of the dentistry course, in which non-beneficiaries achieved a statistically higher mean APC in comparison to beneficiaries of the quota system ($P=.004$). Although higher mean coefficients were also found among the non-beneficiaries in the other courses analyzed, the differences did not achieve statistical significance. The students of the civil engineering course had the worst academic performance among the three courses analyzed. A greater frequency of failures was found among the beneficiaries of the quota system in comparison to non-beneficiaries for the campus as a whole ($P=.010$) as well as for the dentistry course ($P=.004$).

Conclusion: The present findings suggest flaws in the quota system as a strategy for promoting social inclusion and underscore the importance of strengthening elementary and high school education in Brazil.

Keywords: School admission criteria; student; quotas; low-income population.

1. INTRODUCTION

Higher education has traditionally been restricted to the elite in Brazil. The deep-seated social inequalities have been established throughout the history of the country, stemming from slavery, negligence on the part of politicians and the upper classes, a lack of adequate public policies regarding education, the unequal development of different regions of the country and a certain degree of economic backwardness. Associated with these restrictive circumstances, the public university system in Brazil has developed in conformity to the historical formation of Brazilian society, offering education restricted to the upper class and to a lesser extent, the middle classes [1,2].

The democratic concept of the right to education (understood as a right to the maximum possible education and not merely basic education) first emerged in the early 20th century with the creation of large national education systems, the extension of mandatory schooling and the universalization of education free of cost [1]. Differently from countries like United States and Canada, the admission to higher education institutions in Brazil is made through "vestibular", a test mainly performed by students that are graduating from high school. In this admission process, the highest grades win the offered places, in both private and public universities. Another option for entrance, mainly in public Universities, is through the score of ENEM (National Examination of High School), another type of test performed by students. In addition, there is a type of funding provided by the government called ProUni (University Program for All), only applied to students from public

schools, with partial or full scholarships to support the study in private Universities [3]. According to the Federal Law 12,711, 50% of vacancies in federal public Universities must be aimed to low-income students who fully attended public high schools, in addition to afro-american, mullato and native students [4].

The strategies needed to establish a balance among the different classes of society are brought about through effective measures favoring the underprivileged portions of the population. Such strategies are defined by the broad-scoped term "affirmative action", which is used to designate a set of initiatives and policies that favor groups and social segments with inadequate preparation for effective competition in society [5]. One such strategy is the quota system applied to segments of the population that have historically been excluded from higher education, such as students from the public school system, individuals of African and indigenous descent, and those with disabilities.

In 2004, the State University of Paraíba began a democratic access to education process. As a result, the availability of classes was expanded with the creation of new campuses and the number of students has grown through the inclusion of individuals that had previously been excluded due to socio-educational competitiveness [6]. One such campus is Campus VIII in the municipality of Araruna in the state of Paraíba, which is located in the micro-region denominated East Curimataú, encompassing an area of 245,722 km². Arauna is 115 kilometers from the city of João Pessoa, which is the capital of the state of Paraíba. According to data from the 2010 census carried

out by the Brazilian Institute of Geography and Statistics, the municipality has a population of 18,879 inhabitants and a Human Development Index of 0.546, occupying 200th place in the ranking of cities in the state [7].

The aim of the present study was to analyze and also discuss the socioeconomic profile and academic performance of beneficiaries of the quota system in the courses of dentistry, civil engineering and the natural sciences in comparison to students who were not beneficiaries of this system on Campus VIII of the State University of Paraíba, Brazil.

2. MATERIALS AND METHODS

A quantitative, descriptive, cross-sectional study with an inductive approach was carried out involving students on Campus VIII of the State University of Paraíba (northeastern Brazil) in 2013. Descriptive, cross-sectional studies allow the analysis of the distribution of a given condition or situation in the population analyzed and are useful to the determination of collective needs as well as the planning of the measures required to meet these needs. Cross-sectional studies also offer the advantage of objective data obtained at a relatively low cost [8,9].

All students enrolled in the 2nd to 5th periods of the courses of dentistry, civil engineering and the natural sciences (the only courses offered on this campus) who agreed to participate by signing a statement of informed consent were included in the study. First-period students were excluded due to the absence of completed components in the information system. Dropouts, transferred students and those who deferred their studies were also excluded.

All participants answered a semi-structured questionnaire addressing socioeconomic characteristics and academic performance. The study was carried out during a break from classes in order to avoid affecting the academic activities of the students and professors. The academic performance coefficient (APC) of each student was used, which consists of the arithmetic mean of the grades of all classes in a given period and ranges from 0 and 10.0, with 7.0 established as the minimum necessary for passing.

Statistical analysis was carried out using the Statistical Package for Social Sciences (SPSS), version 18.0. Descriptive and analytical statistics were performed. The Student's t-test, Pearson's

chi-squared test and Fisher's exact test were used to determine the significance of associations among the variables. A *P*-value = .05 was considered statistically significant.

3. RESULTS

A total of 321 students were enrolled in the 2nd to 5th periods, 117 (36.5%) of whom were in the dentistry course, 98 (30.5%) were in the civil engineering course and 106 (33%) studied the natural sciences. Forty students (12%) were excluded due to dropouts, transfers or deferred studies. Among the 281 students eligible for the study, 84.7% answered the questionnaire. Thus, the sample was made up of 238 students: 109 from the dentistry course (45.8%), 60 from the civil engineering course (25.2%) and 69 from the natural sciences (29%).

Table 1 displays the data on age, marital status, place of residence, family income and employment status.

Table 2 refers to an educational profile of the students from Campus VIII. Most students in the sample were beneficiaries of the quota system (60.5%). The natural sciences had the largest number of beneficiaries (73.9%).

Most participants in all three courses considered themselves to be good students ($n=221$; 92.9%). The rate of satisfaction was 90% in the civil engineering course and 82.6% in the natural sciences. In contrast, 55 students reported being dissatisfied with the dentistry course (50.5%). These data are displayed in Table 3, along with data on students who changed courses and those who requested transfers.

The mean APC for the campus as a whole was 7.29 among beneficiaries of the quota system and 7.52 among non-beneficiaries; this difference did not achieve statistical significance ($P=.076$). In the dentistry course, the mean APC was significantly higher among the non-beneficiaries ($P=.004$), whereas no statistically significant differences were found between beneficiaries and non-beneficiaries in the other courses ($P>.05$). Moreover, no difference in the APC was found between genders (Table 4).

On the campus as a whole, 46 beneficiaries of the quota system (31.9%) and 16 non-beneficiaries (17.0%) had failed classes; this difference was statistically significant ($P=.010$). In the dentistry course, nine beneficiaries (14.8%)

had failed classes, whereas no non-beneficiaries had failed classes ($P = .004$). (Table 5).

Absenteeism only occurred among non-beneficiaries: two in the dentistry course (7.4%), 15 in civil engineering (55.5%) and 10 in the natural sciences (37.1%).

4. DISCUSSION

In the Brazilian policy of social inclusion, racial and social quotas (also denominated “affirmative action”) consist of the preservation of positions for particular social groups and were created to give individuals of African descent, indigenous peoples, disabled individuals and students of the public school system access to a university education, public positions and the job market. These measures implemented by the Brazilian

government give such groups a fairer chance when competing with the rest of the population. Many see the system of quotas as a way to reduce social exclusion, while others consider it to be a form of discrimination [10]. Equity in access only occurs at the time that everyone has the same conditions to compete, that is, when the education preceding the higher education is offered equally to all, providing a fair competition [11]. Brazilian federal law 12.711/2012 [12] stipulates that federal universities linked to the Ministry of Education must reserve at least 50% of positions for students in undergraduate courses for individuals whose complete high school education was achieved in the public school system. Moreover, 50% of these positions must be awarded to students from families with household income equal to or less than 1.5 times the Brazilian monthly minimum wage [7].

Table 1. Demographic characteristics of students of dentistry, civil engineering and natural sciences on Campus VIII, State University of Paraíba, Araruna, 2013

Variables	Dentistry n=109 n (%)	Civil Engineering n=60 n (%)	Natural Sciences n=69 n (%)	Total/Campus n=238 n (%)
Gender				
Male	44 (40.4)	51 (85.0)	14 (20.3)	109 (45.8)
Female	65 (59.6)	9 (15.0)	55 (79.7)	129 (54.2)
Age				
17-20	42 (38.5)	33(55.0)	16 (23.2)	91 (38.2)
21-25	52 (47.7)	20 (33.4)	31 (44.9)	103 (43.3)
26-30	11 (10.1)	5 (8.3)	8 (11.6)	24 (10.1)
31-40	4 (3.7)	2 (3.3)	14 (20.3)	20 (8.4)
Over 40	1 (0.9)	0 (0)	0 (0)	1 (0.4)
Marital status				
Single	100 (91.7)	56 (93.3)	48 (69.6)	204 (85.7)
Married	9 (8.3)	4 (6.7)	20 (29.0)	33 (13.9)
In stable relationship	0 (0)	0 (0)	1 (1.4)	1 (0.4)
Widowed	0 (0)	0 (0)	0 (0)	0
Place of birth				
Araruna	11 (10.1)	4 (6.7)	34 (49.3)	49 (20.6)
Other municipality	98 (89.9)	56 (93.3)	35 (50.7)	189 (79.4)
Place of residence				
Araruna	84 (77.1)	45 (75.0)	42 (60.9)	171 (71.8)
Other municipality	25 (22.9)	15 (25.0)	27 (39.1)	67 (28.2)
Family income				
- 1 MMW	5 (4.6)	1 (1.7)	10 (14.5)	16 (6.7)
1 x MMW	10 (9.2)	11 (18.3)	22 (31.9)	43 (18.1)
2 x MMW	22 (20.2)	15 (25.0)	17 (24.7)	54 (22.7)
3 x MMW	29 (26.6)	8 (13.3)	13 (18.8)	50 (21.0)
4 x MMW	23 (21.1)	20 (33.3)	7 (10.1)	50 (21.0)
+ 4 x MMW	20 (18.3)	5 (8.3)	0 (0)	25 (10.5)
Paid work				
Yes	13 (11.9)	11 (18.3)	38 (55.1)	62 (26.1)
No	96 (88.1)	49 (81.7)	31 (44.9)	176 (73.9)
TOTAL	109 (100)	60 (100)	69 (100)	238 (100)

MMW: minimum monthly wage

Table 2. Educational profile of students on Campus VIII, Araruna, 2013

Variables	Dentistry	Civil Engineering	Natural Sciences	Total/Campus
	n=109	n=60	n=69	n=238
	n (%)	n (%)	n (%)	n (%)
Quota beneficiary				
Yes	61 (56.0)	32 (53.3)	51 (73.9)	144 (60.5)
No	48 (44.0)	28 (46.7)	18 (26.1)	94 (29.5)
Mean APC				
<7	16 (14.7)	31 (51.7)	30 (43.5)	77 (32.6)
7-8	45 (41.3)	26 (43.3)	20 (29.0)	91 (38.4)
8-9	47 (43.1)	3 (5.0)	19 (27.5)	69 (28.9)
>9	1 (0.9)	0 (0)	0 (0)	1 (0.1)
APC				
<7	15 (13.8)	30 (50.0)	26 (37.7)	71 (29.8)
>7	94 (86.2)	30 (50.0)	43 (62.3)	167 (70.2)
Period				
2 nd	30 (27.5)	13 (21.7)	27 (39.1)	71 (29.8)
3 rd	31 (28.4)	16 (26.7)	16 (23.2)	62 (26.1)
4 th	29 (26.6)	17 (28.3)	16 (23.2)	62 (26.1)
5 th	19 (17.4)	14 (23.3)	10 (14.5)	43 (18.0)
Scholarship				
Yes	29 (26.6)	16 (26.7)	13 (18.8)	58 (24.4)
No	80 (73.4)	44 (73.3)	56 (81.2)	180 (75.6)
Failure				
Yes	9 (8.3)	29 (48.3)	24 (34.8)	62 (26.1)
No	100 (91.7)	31 (51.7)	45 (65.2)	176 (73.9)
Number of failures				
0	100 (91.7)	31 (51.7)	45 (65.2)	176 (74.0)
1	7 (6.4)	13 (21.7)	15 (21.7)	35 (14.7)
2	1 (0.9)	11 (18.3)	7 (10.1)	19 (8.0)
3	1 (0.9)	4 (6.7)	2 (2.9)	7 (2.9)
+3	0 (0)	1 (1.7)	0 (0)	1 (0.4)
TOTAL	109 (100)	60 (100)	69 (100)	238 (100)

Table 3. Self-evaluation of students on Campus VIII, Araruna, 2013

Variables	Dentistry	Civil Engineering	Natural Sciences	Total/Campus
	n=109	n=60	n=69	n=238
	n (%)	n (%)	n (%)	n (%)
Satisfaction with course				
Yes	54 (49.5)	54 (90.0)	57 (82.6)	165 (69.3)
No	55 (50.5)	6 (10.0)	12 (17.4)	73 (30.7)
Difficulty in course				
Yes	28 (25.7)	13 (21.7)	20 (29.0)	61 (25.6)
No	81 (74.3)	47 (78.3)	49 (71.0)	177 (74.4)
Good student				
Yes	104 (95.4)	53 (88.3)	64 (92.8)	221 (92.9)
No	5 (4.6)	7 (11.7)	5 (7.2)	17 (7.1)
Change course				
Yes	30 (27.5)	3 (5.0)	27 (39.1)	60 (25.2)
No	79 (72.5)	57 (95.0)	42 (60.9)	178 (74.8)
Transfer to other campus				
Yes	23 (21.1)	14 (23.3)	6 (8.7)	43 (18.1)
No	86 (78.9)	46 (76.7)	63 (91.3)	195 (81.9)
Total	109 (100)	60 (100)	69 (100)	238 (100)

Table 4. Distribution of mean academic performance coefficient in courses according to quota system and gender, Araruna, 2013

Variable	Course							
	Dentistry		Civil Engineering		Natural Sciences		Total/Campus	
	Mean ± SD	P ⁽¹⁾	Mean ± SD	P ⁽¹⁾	Mean ± SD	P ⁽¹⁾	Mean ± SD	P ⁽¹⁾
Beneficiaries	7.63±0.81	.004*	6.82±0.78	.598	7.18±1.09	.824	7.29±0.96	.076
Non-beneficiaries	8.01±0.50		6.94±0.97		7.10±1.01		7.52±0.92	
Male	7.88±0.67	.310	6.83±0.90	.369	6.88±1.11	.285	7.26±0.98	.082
Female	7.74±0.74		7.12±0.71		7.23±1.05		7.48±0.92	

(1) Student's t-test; * statistically significant

Table 5. Distribution of failures in courses according to quota system, Araruna, 2013

Failures	Dentistry		P ⁽¹⁾	Civil Engineering		P ⁽²⁾	Natural Sciences		P ⁽²⁾	Total/ Campus		P ⁽²⁾
	Yes n (%)	No n (%)		Yes n (%)	No n (%)		Yes n (%)	No n (%)		Yes n (%)	No n (%)	
	Beneficiaries	9 (14.8)	52 (85.2)	.004*	19 (59.4)	13 (40.6)	.067	18 (35.3)	33 (64.7)	.881	46 (31.9)	98 (68.1)
Non-beneficiaries	0 (0)	48 (100.0)		10 (35.7)	18 (64.3)		6 (33.3)	12 (66.7)		16 (17.0)	78 (83.0)	

(1) Fisher's exact test; (2) Pearson's chi-squared test; * statistically significant

The State University of Paraíba stands out for having implemented a quota system in 2007 to make student selection a fairer process and establish a greater degree of equality among individuals from different elementary and high school educational contexts, since the public system has long been considered inferior to the private system [13]. The present study was carried out to determine the socioeconomic profile and academic performance of students in the second to fifth periods of the three courses (dentistry, civil engineering and natural sciences) offered at Campus VIII of the State University of Paraíba, which was inaugurated in 2010. Although the issue of affirmative action is currently widely discussed in Brazil, few studies of this nature have been carried out to date [5,10,14-17], which hinders the comparison of the findings.

The creation of Campus VIII of the State University of Paraíba in the municipality of Araruna, which has a population of approximately 18 thousand inhabitants [7], was designed to offer the opportunity of higher education to in-state communities of the state of Paraíba. Indeed, a large portion of the students in the natural sciences course are residents of neighboring communities. With regard to the dentistry and civil engineering courses, the closest schools of these types are more than 100 kilometers from Araruna in the cities of Campina Grande, João Pessoa and Natal, also located in northeastern region.

In the present study, the majority of students were beneficiaries of the quota system, with the largest concentration in the natural sciences (73.7%). The civil engineering and dentistry courses enjoy greater social prestige and had lower percentages of beneficiaries of the quota system. This situation is also reflected in the socioeconomic status of the students. The majority of students of the natural sciences came from families with a household income around two times the Brazilian monthly minimum wage, which is similar to data described in a previous study [16]. In contrast, the students in the civil engineering and dentistry courses came from families with a household income greater than three times the Brazilian monthly minimum wage. This may explain why only the natural sciences course had a large percentage of students who had a job (55.1%). According to Matos et al. [5], holding down a job while studying at a university is not limited to developing countries or to children from low-income families. However, the

majority of students in the other courses analyzed in the present study (dentistry and civil engineering), which require greater dedication on the part of students, did not work. Gambetta et al. [18] described socio demographic profile of dentistry students of two Chilean Dental Schools and they verified that students from more disadvantaged backgrounds still form a minority, where only 21.5% of the students had finished secondary education in public schools. Differently, in this study, the majority of Dentistry students were beneficiaries of the quota system. According to the Organization for Economic Cooperation and Development (OECD), academic achievement at school is not only linked with school-related factors but also with the socioeconomic environment in which students are raised [19]. To Chevalier and Lanot [20], student academic achievement is closely related to family income but that family's education is the most important factor. For the PISA study, the economic status of a student's family has an impact on academic success, being students with families in good conditions are more successful than who are not [21]. Tomul and Polat [22] evaluated 691 Turkish undergraduate students and stated that familial variables are not strong predictors, but the high school type from which the students have been graduated is an essential predictor for the students' academic achievement. Also, to De Broueker and Underwood [23], parents with high education provide the most conducive environment for their children to study, thus providing the necessary motivation for them to proceed to higher education.

Despite the low incomes, few students on Campus VIII (less than 27%) and 18.8% of the students in the natural sciences course had received scholarships. The distribution of grants for students who participate in extracurricular activities is an important academic incentive with regard to the production of scientific papers, which are necessary at all higher education institutions. According to Zago [15], flexible hours constitute an advantage for students, who generally spend nearly the entire day at the university immersed in academic culture and may later go on to pursue postgraduate degrees. As the majority of individuals studying the natural sciences also had a job, not enough time is available to dedicate to activities for which grant money is available.

Velloso [16] raises an interesting point that, to some extent, is suitable to the present analysis,

namely, the better academic performance of students in the health fields (dentistry in the present case). When choosing a course with greater social prestige, such as dentistry, students from low-income families are challenged to compete for positions at the university with students from families with a higher income who had a better high school education (generally in private schools). Thus, while most students from the public school system choose courses for which there is less competition to increase their chances of passing the entrance exam, a portion of beneficiaries of the quota system in the health field seek a better academic education and attribute importance to the position obtained, with a consequent dedication to their studies and good academic performance. However, while the mean APC in the dentistry course was higher in comparison to the other courses offered on Campus VIII, the beneficiaries of the quota system in this course had a poorer academic performance in comparison to non-beneficiaries, with a significantly lower mean APC and significant greater frequency of failures. Queiroz and Santos [17] found that only 15% of beneficiaries of the quota system and half of non-beneficiaries had an APC higher than 7.6 in the dentistry course of the Federal University of Bahia (Brazil). However, all students of the course (beneficiaries and non-beneficiaries) had an APC higher than 5.1. Moreover, the authors found that 60% of beneficiaries and 65% of non-beneficiaries in the medicine course had a mean APC higher than 7.6, which suggests that the dentistry course at the university in question places greater demands on its students than the medicine course.

In general, the students who pass a university entrance exam those who are better prepared for the exam, that is, those who studied more, attended better high schools and relied on a better structure to learn what was needed to pass the tests of knowledge used for the selection of students at universities [24]. Queiroz and Santos [14] found that the highest score on the entrance exam for the dentistry course among beneficiaries of the quota system was 6.3, whereas the highest score among non-beneficiaries was 7.3. According to the authors, public universities remain extremely selective, in which the dispute for a position in courses of greater prestige is so intense that only the adoption of a specific policy directed at students from the public high school system can ensure these students some chance of getting into a

university. However, this does not translate to flexibility in the demands of the entrance exam or mediocrity in the teaching system, as some may suppose. Pedrosa et al. [25] evaluated academic and socioeconomic data of 6,701 admitted to one of the top Brazilian Universities (Unicamp) from 1994 to 1997 and found that students coming from disadvantaged backgrounds, in both educational and socioeconomic aspects have a higher relative performance than their complementary group. The authors proposed that phenomenon as educational resilience. In contrast, according Gonzalez Plitt [26], in Chile, it was evidenced that the grades of the Mapuche natives were statistically lower than the other students, and there is a great delay of the natives to complete the course.

In the present study, a significantly greater number of failures occurred among the beneficiaries of the quota system in comparison to non-beneficiaries on the campus as a whole. Nonetheless, the overall performance of all students was considered satisfactory, with a mean APC of 7.38. The lowest coefficient was found in the civil engineering course (6.87). This finding may be related to the need for prior knowledge in mathematics, which is deficient in high school education at both public and private schools. In April 2014, the results of the mathematical problem solving test conducted by the OECD (Organization for Economic Co-Operation and Development) were released. Between 44 countries evaluated, Brazil occupies the 38th place with 391 points, and Colombia, on the last place, with 399 points. In 2012, the assessment carried out by PISA (Program for International Student Evaluation) evaluated 15-years old students from members of the OECD and partner countries and put Brazil in 58th place in mathematics performance. The average of the OECD in mathematics was 494 points and Brazil reached only 391 points. Peru is in 65th place, with 368 points [27]. Indeed, the civil engineering course relies heavily on calculus, which may explain the highest rate of failures of among all courses offered on Campus VIII (48.3%). In contrast, Queiroz and Santos [17] found that 59% of beneficiaries of the quota system and 48% of non-beneficiaries in the civil engineering course of the Federal University of Bahia had an APC higher than 7.6.

Regarding the inadequacy of the basic public education system, which is constantly mentioned in the media, Matos et al. [5] stated that initiatives directed at youths should involve

policies that go beyond a mere quota system to offer an education of better quality in public elementary and high schools. Unfortunately, this has not been the case in Brazil and the consequences of this negligence are seen in the realm of higher education. When analyzing the average of 40 countries in Asia, the Americas and Europe, Brazil is the third last in the education ranking, only ahead of Mexico (39th) and Indonesia (40th), according to the Pearson report (connected to the British newspaper Financial Times) and British Consulting Economist Intelligence Unit (EIU). The test evaluated cognitive abilities and school success of students in mathematics, science and reading. However, it cannot be said whether the Brazilian indicator is due to the performance drop of Brazilian students or whether there was an improvement in the world average [28]. Indeed, Zago [15] stated that it is widely understood that public policies directed at basic education have not contributed to ensuring an education of quality. The effects of this exclusion from knowledge appear in one's choice of which course to pursue and are seen clearly in the academic performance of students, especially in the early phases of the course. In the present study, this was most evident in the civil engineering course, which had a large number of failures and cases of absenteeism. Nonetheless, the vast majority of students on the campus as a whole and in the engineering course in particular reported not experiencing difficulties in their studies. The students may recognize that a poorer academic performance stems from inadequate preparation due to a deficient high school education and not necessarily the curriculum offered at the university. Queiroz and Santos [14] found that that the highest score on the entrance exam for the civil engineering course at the Federal University of Bahia, in Brazil, was 7.5 among beneficiaries of the quota system and 7.7 among non-beneficiaries, which demonstrates certain homogeneity.

The rate of satisfaction with the courses was very high among students of civil engineering (90%) and the natural sciences (82.6%), whereas 50.5% of the students of dentistry reported being dissatisfied with the course. This may be due to the delayed installation of the dental laboratories and clinics on the campus as well as the fact that the course was only implanted recently (3 years ago) and is the one that most needs an equipped physical infrastructure. Due to this dissatisfaction, the dentistry students (more than half of those who tried to transfer) were those

who most sought transfers to another campus, in the same course. To Gambetta et al. [18] for 31.7% of students, dentistry can be a second choice alternative to medicine, but in this particular case of the present study, the dissatisfaction was not with the career.

4. CONCLUSION

The present findings reveal that most students on Campus VIII of the State University of Paraíba are beneficiaries of the quota system, with an APC higher than 7.0. A significantly greater frequency of failures was found among the beneficiaries of the quota system on the campus as a whole ($P=.010$) as well as in the dentistry course ($P=.004$). The students of the dentistry course had the best APC, which was significantly higher among the non-beneficiaries than the beneficiaries of the quota system. Students who are beneficiaries of the quota system at the university experience academic difficulties, which stems from an inadequate public high school education. The present findings suggest flaws in the quota system as a strategy for promoting social inclusion and underscore the importance of strengthening elementary and high school education in Brazil.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

This study received approval from the Human Research Ethics Committee of the State University of Paraíba (Brazil) under process number 0279.0.133.000-12, in compliance with Resolution 196/96 of the Brazilian National Health Board.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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