# Academic performance of Medical students benefited by affirmative action

## Desempenho acadêmico de alunos de Medicina beneficiados pelas ações afirmativas

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## ABSTRACT

**Introduction:** São Paulo State University (Unesp) implemented the quota system (affirmative action) for first-year students in 2014, through the vacancy reservation system for students from public schools. The main caveats regarding the quota system concern the difficulties these students have in adapting to the university academic environment, which could interfere with their performance during undergraduate school. Therefore, it is necessary to know about the performance of these students to propose viable alternatives for their needs.

**Objective:** This study aimed to evaluate the academic performance through the academic performance coefficient (APC) of undergraduate students of the medical course at the Botucatu School of Medicine - Unesp (BSM) according to the type of university admission process.

**Methods:** the final APC of students who completed the medical course in the years 2019, 2020, and 2021 were evaluated. The data were obtained from the Undergraduate Section of BSM. Comparisons were made of APC means between groups (universal admission - UA and affirmative action - AA).

**Results:** In the period from 2019 to 2021, 252 students graduated, 184 from UA (73%) and 68 (27%) from AA. The general average of the APC was 8.41 + 0.61. The APC averages of the UA students were 8.45 + 0.61 and the AA averages were 8.31 + 0.60 (p = 0.414).

**Conclusion:** The APC analysis of graduates over three years of the BSM medical course shows that the performance of those admitted through AA and by UA is similar

**Keywords:** Education, medical; Public Policy; Affirmative Actions; Social Quotas.

## RESUMO

**Introdução:** A Universidade Estadual Paulista (Unesp) implantou o sistema de cotas (ações afirmativas) para ingressantes em 2014, por meio do sistema de reserva de vagas destinada a alunos oriundos de escolas públicas. As principais ressalvas quanto ao sistema de cotas dizem respeito às dificuldades de adaptação desses alunos ao meio acadêmico universitário, que poderiam interferir em seu desempenho durante a graduação. Por isso, é necessário conhecer o desempenho desses alunos para poder propor alternativas viáveis para suas necessidades.

**Objetivo:** Este estudo teve como objetivo avaliar o desempenho acadêmico pelo coeficiente de rendimento (CR) escolar dos egressos do curso de Medicina da Faculdade de Medicina de Botucatu (FMB) da Unesp segundo forma de ingresso no vestibular.

**Método:** Foram avaliados os CR finais dos alunos que finalizaram o curso de Medicina nos anos de 2019, 2020 e 2021. Os dados foram obtidos na Seção de Graduação da FMB. Realizaram-se comparações das médias do CR entre os grupos (ingresso universal – IU e ação afirmativa – AA).

**Resultado:** No período de 2019 a 2021, graduaram-se 252 alunos: 184 do IU (73%) e 68 (27%) de AA. A média geral do CR foi de 8,41 ± 0,61. As médias do CR dos alunos do IU foram de 8,45 ± 0,61 e de AA de 8,31 ± 0,60 (p = 0,414).

**Conclusão:** A análise do CR dos formados em três anos do curso de Medicina da FMB revela que o desempenho dos ingressantes por AA e IU é semelhante.

**Palavras-chave:** Educação Médica; Política Pública; Ações Afirmativas; Cotas Sociais.

## INTRODUCTION

Debates about the inequalities in the conditions of access among different social groups to higher education have been present since 1990 on the agenda of international organizations and popular movements, bringing visibility to the problems of traditionally discriminated groups. This discussion contributed to the adoption of affirmative action (AA) policies such as quota programs for the inclusion of social groups with a history of exclusion[1].

The specialized literature reveals that only Brazil, Bolivia, Colombia, Ecuador, Mexico, Peru and Uruguay, in Latin America, have some AA to establish the right to higher education[2].

Higher education admission quotas in Brazilian universities appeared in 2003 with the State University of Rio de Janeiro. Since then, other public universities have implemented this system[1].

The discussion of this public policy has persisted since before the approval of Law Number 12,711/2012, known as the 'Quota Law', which determines the reservation of 50% of vacancies in universities and federal institutes for candidates from public schools and self-declared black, mixed-race or indigenous people (PPI)[1]. This legislation was subsequently adjusted in a fair and necessary manner by Law Number 13,409/2016, which addresses the reservation of vacancies for people with disabilities in high-school level and higher-level technical courses at federal educational institutions.[3]

During this period, the discussion about ethnic-racial quotas in Brazil triggered debates in several forums and different segments of society participated in the discussions. The points of view varied between those who saw quotas as a necessary initiative to promote ethnic-racial inclusion and appreciation and those who condemned them as discriminatory and unconstitutional practices.[4]

In 2023, the Quota Law underwent a review after a decade of its implementation. The update by Law Number 14,723/2023 established that the reservation of vacancies will only be applied if the candidates do not reach the necessary grades to enter the widely competitive university vacancies. Furthermore, the review includes *quilombolas* among the groups contemplated by the quotas and imposes as a requirement the proof of a minimum wage as the maximum *per capita* family income for students seeking to enter University through the quota system, as long as they have finished high school in a public school. These changes reflect an ongoing effort to improve and adapt quota policies to ensure a more accurate and equitable approach to promoting diversity and inclusion in higher education.[5]

A document released by the Academy of Sciences of the State of São Paulo highlighted the limitation of quotas as an effective method to promote access to higher education. One concern raised is that the quotas do not guarantee that the benefited students achieve the expected performance. In highly competitive careers, such as Medicine, Engineering and Law, quotas could result in a decrease in the quality of these courses.[6]

The importance of democratic actions aimed at promoting access to higher education for historically discriminated groups is evident; however, some barriers to the quality of higher education persist, such as issues related to income, ethnicity and educational deficits in the basic education of minority groups[7].

In the Brazilian scenario, the issue of the effectiveness of AA remains controversial. Studies dedicated to analyzing the impact of these policies on students' academic performance contribute to the debate. A study carried out by Silva et al. investigated the performance of quota holders in the National Student Performance Exam (ENADE) in different areas of knowledge. The results indicated that students who benefited from some type of AA had, on average, an 11.8% lower performance compared to other students[8].

However, it is important to note that there are divergences of results in different studies. Queiroz et al. did not find any significant differences in the academic performance indicators of quota students and UA in various undergraduate courses at Brazilian federal universities.[9]

These contradictions are explained by the adoption of different methodologies by researchers when evaluating students, which makes comparisons between studies difficult. A study carried out at the Federal University of Rio Grande do Sul (UFRGS), Federal University of Bahia (UFBA) and State University of Santa Cruz (UESC) used different indicators: academic performance coefficient (APC), graduation rate, grades and evaluation concepts, approval and failure rates at subjects[10–12].

It is important to highlight that the academic performance assessment methods used in the studies predominantly highlight cognitive aspects, such as grades and evaluation results. Despite the importance of these metrics, this emphasis can result in the underestimation of other equally relevant elements in the context of the educational process and student development. However, it is necessary to recognize that aspects such as socio-emotional and communication skills, teamwork ability, critical thinking and creativity pose challenges in their objective measurement.

The academic performance coefficient, an indicator used in several studies, is a measure of academic achievement that consists of the weighted average of the grades obtained in the different studied subjects, where the

weight is the number of the course hours for the subject [10–13]. As it is calculated as the final grade of the student's achievement in the studied subjects, it can include different areas of training. However, it predominantly uses the assessment of cognitive knowledge.

An additional point in evaluating the effectiveness of Affirmative Actions (AA) is to consider dropout rates and, in a complementary way, the graduation rate. Studies indicate that AA beneficiaries have higher graduation rates and lower dropout rates compared to those who enter University through the broad competition system. These findings emphasize not only the access provided by AA, but also its positive impact on the academic retention and completion among students benefitting from quotas, reinforcing the contribution of these policies to equity in the educational environment.[14]

The São Paulo State University (Unesp) adopted the AA for 2014 applicants through the reservation of vacancies for students from public schools (SRVEBP) and those self-declared black, mixed-race or indigenous people (PPI), being the first of the São Paulo state public universities (UNESP, USP and Unicamp) to adopt this system. The implementation of vacancies was progressively carried out, and in 2018, 50% of the total vacancies were allocated to AA. In the medical course at the Botucatu Medical School - Unesp (BMS) in 2019, those entering in 2014 were the first class to graduate.

This context highlights the significant importance of evaluating the effectiveness of Affirmative Actions, after 10 years of its implementation, especially in medical courses, given the scarce number of specific studies in the health area in Brazil.

Considering this scenario, the present study aimed to analyze the impact of Affirmative Actions on the academic performance of medical students, using the academic performance coefficient as a metric.

## Objective

To evaluate the academic performance through the final APC of students graduating from the BSM medical course after the implementation of affirmative actions.

## METHODS

This was a retrospective study including BSM students who completed the medical course in the period from 2019 to 2021, entering the university from 2014 to 2016, respectively, using their final APC.

The data were obtained from the Academic Management System, Unesp academic information program.

The following data were obtained from each student:
1) Final general academic performance coefficient (APC): calculated for each student based on the obtained

grades and workload of the studied subjects;
2) Entry modality: universal (UA) or through affirmative action (AA) (coming from state public education - SRVEBP and PPI).

## Statistical Analysis

The obtained data were described in terms of discrete and continuous quantitative variables.

The Kolmogorov-Smirnov test was used to assess the normality of the data, with the significance of the tests based on the Lilliefors probabilities.

A descriptive analysis was carried out by constructing, for the quantitative variables, tables with means and standard deviations, due to their normal distribution. For qualitative variables, tables were created with frequencies and percentage distributions.

When comparing APC means between the two groups (UA or AA), Student's *t* test was used.

When comparing the three groups (UA, SRVEBP and SRVEBP+PPI), continuous variables were compared using the ANOVA-Tukey test.

The comparison of dropout percentages between the UA and AA groups was performed using Fisher's exact test and the significance level adopted was $p<0.05$.

The program used was the Statistical Package for the Social Science (SPSS) 21.0, IBM™.

## Ethical aspects

The project was approved by the BSM–Unesp Research Ethics Committee (Opinion number 2,648,618). Confidentiality was guaranteed, with no student identification throughout the study.

## RESULTS

The APC of 252 students was evaluated, of which 184 entered University through UA (73%) and 68 (27%) through AA (Table 1). Of the total number of students starting University from 2014 to 2016, 16 students did not finish it, 10 of which dropped out, 5 removals and 1 died. The general dropout rate was 3.9%, 1.4% among those who entered through AA and 4.6% through UA, with no statistical difference between the groups (p = 0.231).

The average APC for all students was 8.41 + 0.61 as shown in Table 2. We observed that 9 (3.6%) students had an APC lower than seven. When the APC was analyzed by year of graduation, higher averages were observed in 2021, with a statistically significant difference compared to 2019 and 2020 (Table 2). The dispersion of students' APC by graduation year is shown in Chart 1.

**Table 1.** Description of students graduating from the undergraduate medical course at the Faculty of Medicine of Botucatu, second year of graduation and entry method. Botucatu, 2023.

| Year of graduation | Universal admission n (%) | Affirmative Action n (%) | Affirmative Action (SRVEBP) n (%) | Affirmative Action (PPI) n (%) | Total |
|---|---|---|---|---|---|
| 2019 | 57 (69.5) | 25 (30.5) | 20 (24.4) | 5 (6.1) | 82 |
| 2020 | 77 (79.4) | 20 (20.6) | 13 (13.4) | 7 (7.2) | 97 |
| 2021 | 50 (68.5) | 23 (31.5) | 20 (27.4) | 3 (4.1) | 73 |
| total | 184 (73) | 68 (27) | 53 (21) | 15 (6) | 252 |

**Table 2.** Average performance coefficient per year of students graduating from the medical course at the Faculty of Medicine of Botucatu - Unesp from 2019 to 2021. Botucatu, 2023.

| Year | N | Mean $\pm$ SD | 95% Confidence Interval | | Minimum | Maximum |
|---|---|---|---|---|---|---|
| | | | Lower Limit | Upper Limit | | |
| 2019 | 82 | 8.36 $\pm$ 0.48 | 8.25 | 8.46 | 7.15 | 9.33 |
| 2020 | 97 | 8.28 $\pm$ 0.69 | 8.14 | 8.42 | 6.13 | 9.40 |
| 2021 | 73 | 8.65 $\pm$ 0.55 | 8.52 | 8.78 | 6.82 | 9.66 |
| Total | 252 | 8.41 $\pm$ 0.61 | 8.34 | 8.49 | 6.13 | 9.66 |

p = 0.000
Test: ANOVA-Tukey

**Chart 1.** Dispersion of the performance coefficient per year of students graduating from the medical course at the Faculty of Medicine of Botucatu - Unesp from 2019 to 2021. Botucatu, 2023.
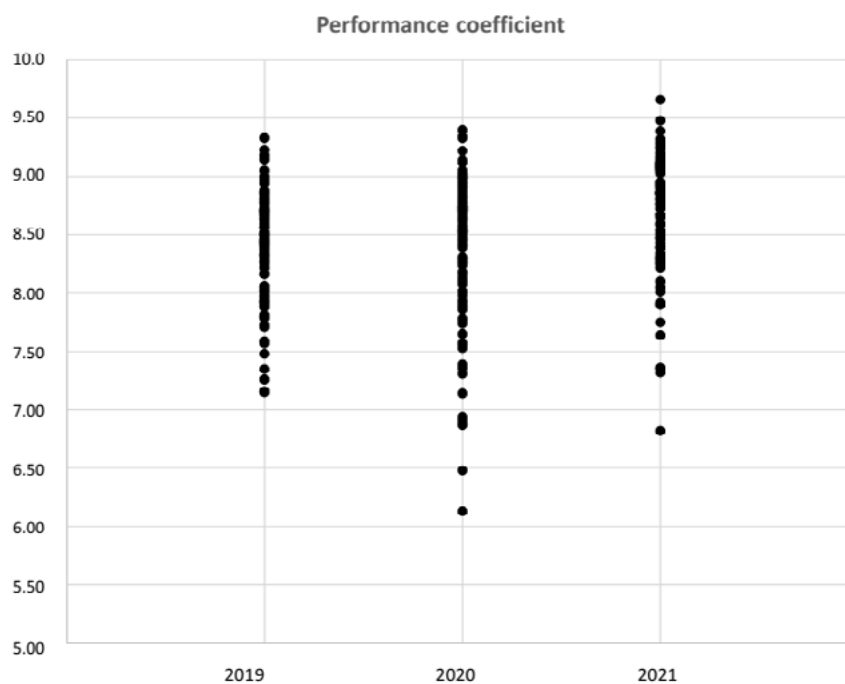


The average APC of UA students was 8.45 + 0.61 and of AA was 8.31 + 0.60, with no statistically significant difference (p = 0.145) between them. In the analysis of the performance coefficient according to admission category (UA, public school and PPI) no statistically significant difference was observed between the categories (Table 3).

## DISCUSSION

The important asymmetry between the racial, ethnic, and socioeconomic composition of medical school students and that of the general population indicates that medical education has long been out of reach for many poor and minority students.[15]

**Table 3.** Performance coefficient of all students graduating from the BSM medical course in the years 2019 to 2021 by admission category, Botucatu - 2023.

| | N | Mean | 95% Confidence Interval | | Minimum | Maximum |
|---|---|---|---|---|---|---|
| | | | Lower Limit | Upper Limit | | |
| Universal Admission | 184 | 8.45 ± 0.61 | 8.36 | 8.54 | 6.13 | 9.66*; ** |
| Affirmative Action | 68 | 8.31 ± 0.60 | 8.19 | 8.52 | 6.48 | 9.40* |
| Public School | 53 | 8.37 ± 0.55 | 8.22 | 8.53 | 6.82 | 9.40** |
| Black, Mixed-race and Indigenous people | 15 | 8.10 ± 0.72 | 7.70 | 8.50 | 6.48 | 8.72** |

* p-value = 0.414.
** p-value = 0.230.
Student's *t* test.

According to the Brazilian Higher Education Census published in 2011, 98% of the students attending public medical schools had a family income five times higher than the minimum wage, and only 6% self-declared their ethnicity as mixed-race or black.[16] However, almost a third of the Brazilian population have less than half the minimum wage to get through the month and around 46.8% of Brazilians declare themselves as mixed-race and 9.4% as black.[17]

The representativeness of different ethnicities and social classes among students, in addition to the social justice issue, may also be relevant for medical training, as the presence of diversity among medical students can better prepare them to care for minority patients.[18]

The adoption of AA allowed admitting students from low-income families and racial minorities into Brazilian universities, but a global assessment of the quality of education and the results of these actions is necessary.

The concept of quality in education is comprehensive and is subject to several factors, with no universal consensus on its definition. However, it is possible to consider several dimensions, analysis categories and indicators when evaluating this aspect. These dimensions encompass the institutional organization, didactic-pedagogical aspects, the institution's facilities and the teaching staff. Within these dimensions, indicators such as pedagogical projects, self-evaluation processes, external evaluations of the institutions and, above all, the integral development of all students emerge.

This study used one of the several dimensions involved in the issue, relating to the educational quality of students who completed the medical course at a public university in São Paulo, evaluating the students' performance through the APC at the end of the course.

School performance is influenced by a series of factors that include the social, economic and cultural characteristics of the family, the student's individual skills and the elements within the school environment. In this context,

the importance of pedagogical projects that guide teaching, internal and external assessments that provide a critical view of the institution, and the focus on the holistic development of each student stand out. These aspects, when integrated and efficiently managed, contribute to the promotion of a high-quality educational environment, capable of positively influencing student performance.[19]

The evaluation of educational quality in higher education is a complex issue, incorporating different determinants, including those related to inclusion and access to higher education.

In the Brazilian context, where the number of vacancies is limited, universities have historically used the admission exam as a selection method.

However, the university admission process in Brazil is subject to criticism. The over-reliance on a single high-stakes exam for student selection is notable. This approach, which favors memorization over critical thinking, can be a disadvantage for those with practical skills, creativity, and unique talents not efficiently captured by standardized tests.

Moreover, the inflexibility of the current access system may not be aligned with the demands of the contemporary job market, which increasingly values skills such as teamwork, adaptability and critical thinking. A more comprehensive approach to selection processes, taking into account extracurricular activities, individual achievements and a broader range of skills, would be beneficial to better prepare students for the academic and professional challenges they will face.

The issue of inclusion in higher education is an important point in this discussion. After a decade, the Quota Law has shown evident results. According to the Institute for Applied Economic Research (IPEA), in 2011, the black and brown population represented 11% of the total 8 million enrollments in universities. In 2017, this percentage increased to 39%.[20]

Even though measuring assessment based on cognitive performance metrics is a challenging task, it has been the most

widely adopted approach. Although it is not the ideal indicator, it is possibly the most accessible and easiest to use. The APC has several limitations as an indicator of academic performance and does not measure the professional skills of graduates from a medical course. As it is the final grade of a subject or internship, it consists of several forms of assessment, where cognitive aspects, skills and practical competencies may have been measured.[21]

This study, using APC, has identified significant results. No significant differences were found in the overall performance between the AA and UA groups, indicating that, despite previous difficulties, during the undergraduate years, AA students achieved similar results and became indistinguishable from the others.

This result is observed among all students and also in each year of course completion. Even when the three admission categories (universal, SRVEBP and PPI) are analyzed, similar performance was observed.

Another important finding from our study was that the course dropout rate in both groups was similar. A study carried out by Mendes Junior observed that the dropout rate was higher among non-UERJ quota students.[22]

The findings of this study are crucial to reinforce the importance of maintaining and improving this public policy, since the Quota Law had its revision discussed in 2022, when the ten-year period expired, starting from the date of its publication.

A variable that must be considered when analyzing the performance of students benefiting from AA is the competition for admission at the university. Students from more competitive courses often perform better than others[8]. The BMS Human Medicine course is the most popular course at Unesp, as well as one of the most popular medical courses in Brazil, with a ratio of 261.4 candidates/place for the 2022 admission exam (when 50% of the vacancies were reserved for AA). Due to this high competition and also the structure of the quota system in this university's admission exam, the final result of students who benefit from AA is very high and close to that of students admitted through UA.

Other studies have also evaluated the academic performance of medical school students. At the State University of Campinas, it was observed that students with a bonus granted in the admission exam finished the course under equivalent conditions to the others and with similar chances of admission at the Medical Residency[23].

Marcomini Neto et al. evaluated a retrospective cohort of students from the first to the third years of Medicine, divided into quota students and broad competition regarding the arithmetic average of the final grades of the curricular subjects, final approval status in the subjects, frequency,

titles borrowed from the library and participation in tutoring/academic center. There was a fluctuation in the academic performance of quota students, downwards, in relation to students in broad competition, throughout the first three years of the medical course, and there were no significant differences for the other variables[24].

Based on the above, we reinforce that AA are relevant for the expansion of Brazilian human capital and socioeconomic development.

However, for these measures to actually benefit groups that suffer discrimination, their effects on the fight against the endured prejudice through legal, political and social means must be considered.

A study carried out through interviews with quota students about how they experience the feeling of belonging when entering the medical community identified that many suffer from low self-esteem and racial and social discrimination, in addition to having difficulties identifying with the medical environment[25].

Therefore, it seems evident that, in an elitist environment such as medical schools, only the inclusion of discriminated groups is not enough, and it is essential to implement strategies to support the integration of these students into the medical community.

## Limitations

This study used only one parameter to evaluate academic performance in a single undergraduate medical course.

## CONCLUSION

The analysis of the results of medical course graduates in three years of the BSM course shows that, overall, the performance of students entering the university through AA and UA is similar.

The Quota Law constitutes a gain for certain social groups, allowing social mobility through educational opportunities; however, it is important to apply related policies, both in the public basic education network and in higher education.

In medical schools, with the implementation of affirmative actions, allowing individuals with different origins and experiences to participate in the construction of academic knowledge contributes to the creation of a path where the demographic profile of society is represented in medical communities, so that they are considered legitimate and belonging.

## AUTHORS' CONTRIBUTION

Adriana Polachini do Valle Pedro Tadao Hamamoto Filho: Study concept, formal analysis, methodology, validation, manuscript

writing, review and editing. Gustavo Noe de Marco and Giulia Ferras: data curation, investigation, manuscript writing, review and editing. Rafael Teixeira Dias: formal analysis, methodology, manuscript writing, review and editing. Paulo José Fortes Villas Boas: Study concept, formal analysis, data curation, investigation, methodology, project administration, validation, manuscript writing, review and editing.

## CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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## REFERÊNCIAS

1. Galhardo E, Vasconcelos MS, Frei F, Rodrigues EB. Desempenho acadêmico e frequência dos estudantes ingressantes pelo Programa de Inclusão da Unesp. Aval Rev Aval Educ Super Camp. 2020;25:701-23.

2. Hernández TK. Brasil na vanguarda latino-americana das políticas de ação afirmativa baseadas em raça e dos recenseamentos com recorte racial. In: Hernández TK. Subordinação racial no Brasil e na América Latina: o papel do Estado, o direito costumeiro e a nova resposta dos direitos civis. Salvador: Edufba; 2017 [acesso em 20 jan 2023]. Disponível em: http://books.scielo.org/id/jr9nm.

3. Brasil. Lei nº 13.409, de 28 de dezembro de 2016. Diário Oficial da União; 29 dez 2016[acesso em 15 dez 2023]. Disponível em: https://legislacao.presidencia.gov.br/atos/?tipo=LEI&numero=13409&ano=2016&ato=dc0kXUE90dZpWT26c.

4. Guarnieri FV, Melo-Silva LL. Cotas universitárias no Brasil: análise de uma década de produção científica. Psicol Esc Educ. 2017;21:183-93.

5. Brasil. Lei nº 14.723, de 13 de novembro de 2023 – Lei das Cotas [acesso em 16 dez 2023]. Disponível em: https://www.planalto.gov.br/ccivil_03/_Ato2023-2026/2023/Lei/L14723.htm.

6. Goldemberg J, Durham ER, Castro MHG de, Schwartzman S. Ações afirmativas nas universidades brasileiras. São Paulo: Academia de Ciências do Estado de São Paulo; 2014 [acesso em 10 dez 2023]. Disponível em: https://jornal.usp.br/wp-content/uploads/acoes.pdf.

7. Felicetti VL, Morosini MC. Equidade e iniquidade no ensino superior: uma reflexão. Ensaio: Avaliação e Políticas Públicas em Educação. 2009;17:9-24.

8. Silva GD, Teixeira EC, Costa LV. Efeito das ações afirmativas no ensino superior público brasileiro. Pesqui Planej Econ 2021;51(1) 137 - 160.

9. Queiroz ZCLS, Miranda GJ, Tavares M, Freitas SC de. A lei de cotas na perspectiva do desempenho acadêmico na Universidade Federal de Uberlândia. Revista Brasileira de Estudos Pedagógicos. 2015;96:299-320.

10. Tresoldi T, Simões LJ, Nabarro E, Polidori M. Análise de desempenho acadêmico de estudantes com ingresso por reserva de vagas na Universidade Federal do Rio Grande do Sul (UFRGS). Simpósio Avaliação da Educação Superior. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2015.

11. Ferraz MIF, Jelihovschi E, Silveira FB. Análise do desempenho acadêmico do primeiro ano de implantação do sistema de reserva de vagas na Uesc. Ilhéus: Universidade Estadual de Santa Cruz; 2009.

12. Peixoto A de LA, Ribeiro EMB de A, Bastos AVB, Ramalho MCK. Cotas e desempenho acadêmico na Ufba: um estudo a partir dos coeficientes de rendimento. Aval Rev Aval Educ Super Camp. 2016;21(2):569-92.

13. Núcleo de Apoio Pedagógico, Comissão de Reestruturação Curricular. Projeto Político Pedagógico do Curso de Graduação em Medicina da Faculdade de Medicina de Botucatu – 2014. Botucatu: Unesp; 2014 [acesso em 1° jul 2014]. Disponível em: https://www.fmb.unesp.br/nap.

14. Pinheiro DC, Pereira RD, Xavier WS. Impactos das cotas no ensino superior: um balanço do desempenho dos cotistas nas universidades estaduais. Rev Bras Educ. 2021;26:e260020.

15. Talamantes E, Henderson MC, Fancher TL, Mullan F. Closing the gap – making Medical school admissions more equitable. N Engl J Med. 2019;380(9):803-5.

16. Sampaio CEM, Silva CC da. Resumo técnico: Censo da Educação Superior de 2011. Brasília: Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira; 2011. [Acesso em 21 agosto de 2022]. Disponível em: https://download.inep.gov.br/download/superior/censo/2011/resumo_tecnico_censo_educacao_superior_2011.pdf.

17. Neri M. Mapa da nova pobreza. Rio de Janeiro: Fundação Getulio Vargas; 2022 [Acesso em 21 agosto de 2022]. Disponível em: https://www.cps.fgv.br/cps/bd/docs/Texto-MapaNovaPobreza_Marcelo_Neri_FGV_Social.pdf.

18. Lang L. Racial diversity among medical students may better prepare them for minority patient care. Gastroenterology. 2008;135(5):1439..

19. Argôlo RF. Determinantes de desempenho dos estudantes do ensino superior: o caso do curso de Psicologia da Ufba [dissertação]. Salvador: Universidade Federal da Bahia; 2017 [acesso em 16 dez 2023]. Disponível em: https://repositorio.ufba.br/handle/ri/23984.

20. Silva TD. Ação afirmativa e população negra na educação superior : acesso e perfil discente Brasília: Instituto de Pesquisa Econômica Aplicada; 2020 [acesso em 16 dez 2023]. Disponível em: https://repositorio.ipea.gov.br/handle/11058/10102.

21. Troncon LEDA. Avaliação do estudante de medicina. Medicina (Ribeirão Preto, Online). 1996;29(4):429-39.

22. Mendes Junior AAF. Uma análise da progressão dos alunos cotistas sob a primeira ação afirmativa brasileira no ensino superior: o caso da Universidade do Estado do Rio de Janeiro. Ensaio: Avaliação e Políticas Públicas em Educação. 2014;22(82):31-56.

23. Moreira G de O. Validade preditiva do processo seletivo para admissão em medicina e o papel das ações afirmativas em relação ao desempenho durante a graduação e na seleção para a residência médica [tese]. Campinas: Universidade Estadual de Campinas; 2017 [acesso em 20 jan 2023]. Disponível em: https://repositorio.unicamp.br/acervo/detalhe/990235.

24. Marcomini Neto A, Fucuta P da S, Brienze VMS, Lima AR de A, Brienze SLA, André JC. Flutuação do desempenho acadêmico de alunos de medicina selecionados por políticas afirmativas (PIMESP). Rev Bras Educ Med. 2022;46(1):e017.

25. Machado MB, Ribeiro DL, Carvalho Filho MA de. Social justice in medical education: inclusion is not enough-it's just the first step. Perspect Med Educ. 2022;11(4):187-95.