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Articles

The More Doctors Program and the Curricular Guidelines for Medical courses: a comparative analysis among higher education institutions

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The article was constructed from an exploratory, documentary research and investigates the curricular matrices of the medicine courses of three higher education institutions, trying to identify the weight they give to a more humanistic education of their students, in accordance with what is recommended by the More Doctors Program (PMM). Two Brazilian institutions were examined, one public and one private, both in Rio de Janeiro, and also a third institution, located in Cuba. In the education of Cuban doctors, importance is given to disciplines categorized as "Public Health Education". Contrary to this design, the education of Brazilian doctors reflects the conflict between teaching and the reality of the country, visible in the difficulty in educating doctors to work in primary care and in retaining them in the most remote places of Brazil.

Keywords: Medical education. Public policies. Public Health.

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Introduction

This article analyzes the medical education constructed by higher education institutions based on an examination of their curricular matrices. It aims to identify the space they allocated to education targeted at action in the public health area. The research focused on two higher education institutions in the state of Rio de Janeiro, comparing what is performed there with what is practiced by medicine courses in Cuba, specifically in its capital city, Havana, where the country's main school of medicine is located.

Therefore, based on a brief panorama of the conduction of the Brazilian medical education, we compare the current configuration of the curricular guidelines for medicine courses in Brazil[1] with what is practiced in Cuba, due to the fact that it is the country that "offers" the highest number of medical professionals for international missions[2]. In addition, Cuba prioritizes an academic education targeted at family and social medicine, educating "family doctors" trained to practice community medicine[3].

In Brazil, regulations for medical education and guidelines for undergraduate courses were belatedly legitimated. The first was the National Education Guidelines and Framework Law (LDB), promulgated at the end of the 1990s. It is important to highlight that many education models are in disagreement with the country's reality, not to mention the fact that teaching institutions voluntarily adhere to these models. All these issues negatively affect the education of professionals with an adequate profile to work in the Brazilian National Health System (SUS). These approaches have already been considered by the More Doctors Program (PMM) regarding the improvement in medical education, indicated in curricular reforms targeted at primary care[1].

The central argument of this article is based on a comparative exercise in which we intend to highlight the approaches to medical education constructed by the higher education institutions themselves. After all, if we intend to discuss a medical education that focuses on primary care grounded on what PMM proposes[4], it is necessary to shed light on the model on which the curricular bases are structured.

Method

The work derived from an exploratory research conducted by means of a qualitative[5] documentary analysis, aiming to provide a general view of the curricular matrices. To its development, we analyzed the curricular guidelines of medicine courses from three different teaching institutions.

The reason for choosing the two Brazilian higher education institutions was that 55.3% of the Brazilian doctors are concentrated in the Southeast region, and the state of Rio de Janeiro presents one of Brazil's highest proportions of doctors in relation to the number of inhabitants (3.75 doctors per one thousand inhabitants), second only to the Federal District (4.28 doctors per one thousand inhabitants)[6]. In addition, one institution is a public university and the other is a private one. They are the higher education institutions that offer the highest number of seats authorized by the Brazilian Ministry of Education (MEC), and are referred to as: (1) public higher education institution – HEI1; and (2) private higher education institution – HEI2. Chart 1 presents the higher education institutions of the state of Rio de Janeiro, their location, number of seats, and the year when the course started.

Chart 1. Higher Education Institutions offering Medicine Courses in the State of Rio de Janeiro.

Private institutions with seats authorized by MEC			
City	**Supporting entity**	**Annual seats (2017)**	**Course started in**
Valença	HEI4	150	1968
Rio de Janeiro	HEI5	170	2014*
Rio de Janeiro	HEI2	240	1997
Petrópolis	HEI6	150	1967
Teresópolis	HEI7	144	1970
Vassouras	HEI8	160	1969
Campos dos Goytacazes	HEI9	126	1967
Rio de Janeiro	HEI10	192	1971
Volta Redonda	HEI11	120	1968
Itaperuna	HEI12	100	1997
Nova Iguaçu	HEI13	100	1977
Itaperuna	HEI14	112	2015*
Duque de Caxias	HEI15	110	1997
Rio de Janeiro	HEI16	110	2007
Total number of authorized seats in undergraduate medicine courses offered by private higher education institutions in the state: 1,984			
Public institutions with seats authorized by MEC			
City	**Supporting entity**	**Annual seats (2017)**	**Course began in**
Rio de Janeiro	HEI17	94	1936
Niterói	HEI18	180	1926
Rio de Janeiro	HEI1	200	1808
Macaé	HEI19	60	2009
Rio de Janeiro	HEI20	160	1912
Total number of authorized seats in undergraduate medicine courses offered by public higher education institutions in the state: 694			
Total number of authorized seats in undergraduate medicine courses offered by higher education institutions in the state: 2,678			

*No doctors have graduated from these institutions yet.
Source: emec.mec.gov.br. Accessed on: August 3, 2017

The city of Rio de Janeiro has seven medicine courses, four private and three public, which, together, offer 1,166 authorized seats (43.5% of the state's seats). According to Scheffer et al.[6], the city has a proportion of 6.28 doctors per one thousand inhabitants, which represents 66% of the doctors of the entire state and 34.7% of the doctors of the Southeast region.

We also selected a Cuban university with which to compare the medical education model used by the Brazilian institutions. Before we proceed, it is necessary to draw some considerations on the criteria we used to choose this institution, in view of the article's central argument: the process of curricular change for medical education in Brazil, backed by the Ministry of Education and instituted by PMM, based on a care model that focuses on primary care[1]. The teaching of medicine in Cuba prioritizes this aspect[7] in professional education. It is no coincidence that Cuba is the country that sends the highest number of professionals to practice medicine in Brazil[8], in the sphere of PMM. The Cuban university that we chose is located in the capital city, Havana: HEI3 - a public institution, like all in the country. It is Cuba's most traditional and renowned university.

The next step was to analyze the courses' curricular matrices, aiming to compare the curricular components offered to students in each one of the universities. This

analysis attempts to congregate the different components present in the matrices of these courses and their respective number of hours.

The development of this article was based on the competence areas expressed in the National Curricular Guidelines (DCN) of 2014 to subsidize the purposes and principles of medical education. The areas are: (a) Healthcare; (b) Health Management; (c) Health Education. It is important to highlight that the implementation of the guidelines has not been concluded yet. The deadline for the higher education institutions to comply with them is the end of 2018. These three large areas will be used as an "ideal type" for the analyses but, in practice, the categories established by Almeida et al.[9] (2007) based on the 2001 DCN prevail: (1) general skills and competencies; (2) specific skills and competencies; and (3) education for SUS. Using categories from the 2001 DCN does not affect the study's contemporaneity, as these categories are, in fact, still in force.

The last category, "education for SUS", represented by disciplines referring to the Brazilian public health, was called "public health education" here to enable the comparison with the Cuban course. However, the essence of the category remained the same. Therefore, the article highlights the urgent implementation of the new curricular guidelines following the PMM precepts, in order to bring medical education closer to Brazil's social vulnerabilities.

Theory, Results and Discussion

The DCN for undergraduate courses was introduced in Brazil after the promulgation of the LDB[10], which changed the way of conceiving and struggling for the guarantee of the right to education. Concerning medicine courses, the objective is the construction of an academic and professional profile with contemporary competencies and contents, so that graduates can work in the sphere of SUS. Thus, with a more generalist, humanistic and flexible education in terms of the format that is offered[11], it is possible to overcome the "old and hermetic conceptions of curriculum grids (prisons)"[12]. In this context of education formatting, curriculum "grids" were instituted for the health courses, and advances are still needed according to the country's regional realities. It is important to highlight the importance of the relationship between theory and practice to amplify knowledge, skills and attitudes based on "critical and propositional reflections in the field of medical education, having the SUS as the guide"[13] (p. 197).

However, the National Council of Education, by means of opinion no. 776/1997, states that each higher education institution should establish the number of hours and the contents necessary to the education of the medical professional[14]. This measure allows the advance of technical disciplines to the detriment of social disciplines, generating an effect that is contrary to what is proposed in terms of qualification for primary care.

This flexibility in the design of the courses' curricular structure, understood as the autonomy of educational institutions, was strengthened by the first medical DCN, released in 2001. According to Pereira and Lages[15], this flexibility should be seen with caution, as it can exempt universities from meeting the society's needs. The State must develop policies that induce universities to play their social role. This movement of readjusting the curricular matrix of medicine courses in Brazil is not a trajectory that

has no obstacles and is free of interests. Thus, so that the article's purposes are meaningful, we present the chronological route of these changes in order to understand them, and it is through this approach that we attempt to comprehend medical education in Brazil.

Regarding discussions about curricular configurations, the principles of institutional autonomy were outlined in the 2001 DCN. In addition, this DCN stimulated the construction of a network of knowledge and practices present in the professional fields and connected with the daily routine of university education (theory-practice articulation), as well as the integration among teaching, research and extension, and the use of continuous assessment practices[11]. Resulting from international debates and movements in the area of health that occurred at the time, like the Jakarta Conference in 1997, the 2001 DCN brings an identification with the field of the Social Sciences[16].

Movements subsequent to the 2001 DCN contributed to put into practice what was originally in the guideline. The first one, in 2002, was the Incentive Program to Curricular Changes in Medicine Courses (PROMED), which had the participation of the National Councils of Health and Education, the Ministry of Health, the Pan American Health Organization (PAHO), the Ministry of Education, the Brazilian Association of Medical Education (ABEM), and Rede Unida.

The program is born in an attempt to make curricular changes in undergraduate medicine courses in order to meet the demands of SUS, and its motto is "a new medical school for a new health system". One of the greatest concerns is excessive medical specialization, which results in a low number of doctors with a comprehensive and generalist view. These issues cause an increase in healthcare costs[17], as an inefficient primary care overloads the logistics of the medium and high complexity sectors in the area of health. However, the fact that PROMED has a voluntary character allowed the massive non-adherence of the higher education institutions, as only 19 schools out of 118 adhered to the program[18], preventing the integral adjustment of the curricula of the country's schools.

In 2003, during the 12th National Health Conference, the control agencies' role of supervising institutions' compliance with norms issued by the government related to the opening and functioning of courses for health professionals' education was highlighted, as well as their role of investigating the implementation of modifications in education models. It is worth highlighting the concern for adjusting the existing schools and the orientations for the opening of new courses in the area, according to regional, social, economic, epidemiological and demographic characteristics, and based on guidelines for the organization of healthcare[19].

Between 2006 and 2009, the Committee for the Assessment of Medical Schools of the Brazilian Association of Medical Education (CAEM/ABEM) developed the project "Evaluation of Change Trends in the Undergraduate Course of Brazilian Medical Schools". In practical terms, this project had the voluntary adherence of 28 higher education institutions[20], and its proposal was the transition from a Flexnerian teaching model to a model that values comprehensiveness - a biopsychosocial model.

In 2013, the "Seminar of Medical Education for Primary Care" was held, with the participation of representatives of the government and of medical schools, public managers and medicine students. The event aimed to (a) promote debates about challenges related to the provision of medical professionals according to the needs of primary

care; (b) discuss strategies to educate this professional; and (c) propose strategies to improve medical education[21]. Although the proposals had a normative character, they were created to strengthen the teaching-research-extension inseparability, to amplify internship interiorization practices by means of agreements with municipal managements, to value the teaching career connected with primary care, to promote interactions between the undergraduate course and the medical residency, and to regionalize medical courses, with the responsibility of providing a sufficient number of professionals with a profile adequate to local needs[21].

However, there is not a sufficient amount of professionals working according to the SUS premises[4,22], mainly in primary care. This gap is criticized by municipal managers[23] and, mainly, by the population[24], in relation to the quality of the public health that is offered. Thus, several governmental initiatives have been "tested" since the 1960s, aiming not only to improve the action of these professionals according to the national reality, but also to promote the interiorization of this workforce. The highlights are the Rondon Project (1968), the Program of Interiorization of Health Actions and Sanitation (PIASS, 1976), the Program of Interiorization of the Brazilian National Health System (PISUS, 1993), and the Program of Interiorization of Health Work (PITS, 2001). All of them have converging points regarding this issue[25]. Recently, the Qualification Program for Primary Care Professionals (PROVAB)[26] was instituted.

Along this line, the "More Doctors Program" (PMM)[4] was launched in 2013, involving joint actions between the Ministry of Health and the Ministry of Education. It promotes not only a call for doctors to work in priority regions - an emergency measure -, but also the improvement in infrastructure and health equipment, the increase in the number of seats in undergraduate medicine courses and specialization/medical residency courses, and the enhancement of medical education by means of curricular reforms targeted at primary care[1].

For this article, we are interested in the unfolding related to medical education, regarding the structuring axis of PMM, which "recommends" the reorientation of the curriculum, emphasizing primary care and fostering "public health education" – the impacts of which will be felt in the medium and long terms[27]. These issues are still inserted in distinct and plural territorial realities.

The new DCN for undergraduate medicine courses derives from this program. It aims at emphasizing the overcoming of pragmatic and disciplinary curricular models, interconnecting teaching, research and extension during education, and giving credit to in-depth knowledge in the care, management and education areas. This new teaching format involves even the inclusion of new techniques in the sphere of pedagogical practice, reducing the distance between the university and the health services[13].

It is possible to perceive, here, the "voluntary" character of this proposal, as the PMM's guidelines mention the adjustment to the new format only as a recommendation to the higher education institutions. In addition, there is the complexity of a system that joins the public and the private dimensions, ranging from medical teaching to care provision, and the most complex, specialized and technological services, that is, the most expensive and lucrative ones, are allocated to the private sector. It is in this arena that proposals for changes in the academic medical education are presented. The inevitable conflicts are, somehow, left aside in the proposition of a new DCN[1], which is in force, in a "voluntary" way, in a complex and remarkably competitive environment.

In practice, it is still necessary to include, in teaching, the importance of social factors for health, mainly in medical activities, approaching the interrelation between health-disease and the clinical and sociological phenomena experienced in such a heterogeneous country[28]. Proposals for a humanized and comprehensive healthcare are seen as important strategies to fill this gap[29].

The current DCN for the medicine course provides considerations about "biological, subjective, ethnic-racial, gender, sexual orientation, socioeconomic, political, environmental, cultural differences"[1] (p. 1). The document also establishes comprehensive and humanized care "by means of a continuous medical practice integrated to the other health actions and levels, in the construction of shared therapeutic projects" in which "interprofessional teamwork prevails, with the development of a horizontal, shared relationship"[1] (p. 1). Therefore, it reiterates the purpose of promoting a general, humanistic and critical medical education, capable of acting in different healthcare levels, with social responsibility, and committed to the defense of citizenship, human dignity and the population's integral health[1,27,30].

The analysis of the applicability of the DCN to medicine courses in higher education institutions takes into account the large number of universities in Brazil. There are 288 higher education institutions, responsible for 29,252 seats[31.] They predominate in the private educational network (69.9%) and 41% of them are located in the Southeast region[31,32].

To give more density to our comparison of curricular matrices, a foreign higher education institution was considered: HEI3, in Havana, the capital city of Cuba. Cuba is a country internationally known as an "exporter of doctors". Since the implementation of PMM, it has been the main collaborator, as it has provided 63% of the total number of doctors, which means more than 11 thousand professionals working in primary care services[6].

The action, in Brazil, of foreign doctors through PMM, the majority of whom coming from Cuba due to their education and practical action, minimizes the excessive use of technology in health practices, and values social issues involved in treatments[33]. In fact, there has been an improvement in the quality of healthcare at units that benefitted from the Program, even in remote, socioeconomically vulnerable regions where the public equipment that provides primary care services has a poor infrastructure[5,34,35].

The comparison of the higher education institutions' curricular guidelines allows us to have a panoramic view of how each institution plans the education of the medical professional to act in society. According to Heinzle and Bagnato[36], the curriculum results from a circularity of discourses and texts. The authors argue that "the political and social construction of the curriculum expresses principles and theories of a certain historical period"[36] (p. 227).

The 2014 DCN starts with a curricular restructuring as a way of responding, in an integral way, to the demands of the Brazilian public health system, considering the social, cultural and psychological determinants, in the collective and individual levels, of the health-disease process. This reveals the need to incorporate the Social and Human Sciences as a "transversal axis" in the education of professionals with a generalist profile[1].

According to Barros[16], "the contemporary doctor must be qualified to embrace, understand, be responsible and provide solutions for the largest part of individuals'

and populations' health needs and demands" (p. 50). The doctor needs an interdisciplinary education and must break with the values, symbols and perceptions of the old models, which focused only on the teacher's technical qualification: it is necessary to be a doctor to be able to teach medicine. The author[16] states that, although the 2001 DCN is established, there is an abyss between what is formally expressed and what is observed in practice, mainly concerning the structural and cultural difficulties of medical schools - what Bonet[37] calls divergence between the "book medicine" and the "lived medicine".

Chart 2 provides a comparative panorama of the curriculum offered by the higher education institutions in their medicine courses, grouped according to the categories established by Almeida et al.[9], adapted to this study, and their respective number of hours.

Chart 2. Comparative table of the curriculum grids of the medicine courses

HEI / Competencies	HEI1*	HEI2**	HEI3***
General Skills and Competencies	Anatomy MI Biophysics MI Biochemistry MI Basic Histology and Embryology Microbiology and Immunology MI General Pathology M Health and Work Health Administration and Planning	Environment and Health Molecular Bases of Organic Systems Biomorphology Psychopedagogical Orientation Pathological Anatomy Physiopathology Infectious and Parasitic Diseases	Inglés (I - X) Educación Física (I - IV) Metodología de la Investigación y Estadística Anatomía Patológica
Total number of hours	1,065	637	1,153
Specific Skills and Competencies	Genetics and Evolution for Medicine Nervous System Cardiovascular and Respiratory System Comprehensive Care Digestive System Urinary System Endocrine and Reproductive System Nervous System Cardiovascular and Respiratory System Medical Parasitology Clinical Propaedeutics Internal Medicine (I, II, and III) Medical Psychology Pediatric Clinic (I and II) Pharmacology (MI and MII) Forensic Pathology Surgery Gynecology Ophthalmology Orthopedics and Traumatology Otolaryngology Infectious and Parasitic Diseases Legal Medicine Obstetrics Psychiatry and Mental Health Rotational Internship (A – Medical Clinic; B – Surgery; C- Pediatrics; D – Gynecology and Obstetrics) Internship (Surgery; Medical Clinic; Gynecology and Obstetrics; Pediatrics)	Medical Microbiology Medical Parasitology Medical Psychology Imaging Medical Propaedeutics Medical Psychology Surgical Clinic (I, II, and III) Medical Clinic (I, II, and III) Medical Pharmacology (I and II) Child and Adolescent Health (I and II) Bioethics Applied to Medical Practice Women's Health (I and II) Health of the Elderly Mental Health Legal Aspects of Medical Practice Medical Emergencies Internship (I to IV) Integrated Organic Systems (I to III) Integrated Seminar (I to VIII)	Introducción a la MGI Morfofisiología (I - VI) Informática médica Genética Médica Psicología Médica (I / II) Microbiología y Parasitología Médica Propedéutica Clínica y semiologia Farmacologia (I / II) Medicina Interna Pediatria Medicina de desastre (I / II) Ginecología y Obstetricia Psiquiatria Medicina General Integral Medicina Legal y Ética Médica Ortopedia ORL Oftalmología Dermatología Urología Medicina Interna Pediatria Ginecobstetricia Cirugía Medicina General Integral
Total number of hours	5,706	6,941	8,005

it continues

Chart 2 - Comparative table of the curriculum grids of the medicine courses

HEI / Competencies	HEI1*	HEI2**	HEI3***
Public Health Education	Epidemiology Health Administration and Planning	Family Health (I to VIII) Epidemiology (I and II)	Promoción de Salud Prevención em Salud Medicina Comunitaria Salud Pública
Total number of hours	190	576	800
Elective disciplines	1,741	216	360
Total number of hours	8,702	8,370	10,318
Number of hours (except elective disciplines)	6,961	8,154	9,958

*Source: Prepared by the authors based on information from the portal of the School of Medicine - HEI1.
**Source: Prepared by the authors based on information from the portal of the School of Medicine - HEI2.
***Source: Prepared by the authors based on information from the portal of HEI3.

In analytical terms, as Table 2 shows, the disciplines of the curriculum grids of the higher education institutions were divided into four large groups, based on the "competencies" in medical education: (1) General Skills and Competencies; (2) Specific Skills and Competencies; (3) Public Health Education; and (4) Elective Disciplines. The elective disciplines were not approached in this study, as they may not be attended by all students. Therefore, only the first three categories were analyzed.

The curriculum of the Brazilian public institution has a total number of hours, without including the elective disciplines, of 6,961, the private institution, of 8,154, and the Cuban institution, of 9,958. The curricular matrix of the Cuban university has a higher number of hours in all the categories, indicating a broader education within the health model proposed by Cuba, which is largely similar to the principles of the Brazilian SUS. It is important to highlight that the curricular matrix present in the portal of HEI1 dates back to 1997. Therefore, it was prepared before the release of the first medicine DCN in Brazil (2001).

In the category "Public Health Education", the number of hours of HEI2 (576 hours) is disproportionate in relation to HEI3 (800 hours), and the number of hours offered by both is much higher than that of HEI1. In spite of the proximity between the first two institutions, in HEI3 the disciplines adhere more to primary care approaches: "*Promocion de Salud*", "*Prevención en Salud*", *"Medicina Comunitaria e Salud Pública*".

In HEI2, the configuration of the curriculum grid values Family Health learning, offering disciplines in eight semesters of the course. Therefore, it follows the precepts of the new DCN, released in 2014, concerning the course's total number of hours. In the category "General Skills and Competencies", the discipline "Environment and Health" called our attention due to its amplified concept of health and its determinants in the health-disease process, following historical national and international influences on public health. The contradiction is that, while the private institution adopts an education model that emphasizes primary care, in accordance with what is proposed by the National Primary Care Policy (PNAB)[38], these medical teaching prerogatives were not observed in the Brazilian public institution analyzed here.

Another highlight in the curriculum grid of HEI2 occurs in the category "Specific Skills and Competencies". It is related to the disciplines that have an integrated character: "Medical Clinic (I, II and III)", "Integrated Organic Systems (I, II and III)" and "Integrated Seminar (I to VIII)". The latter approaches health problems in an integrated way, outside the frames of the traditional disciplines of medicine courses, which used to be taught before the release of the last DCN, and can still be seen in the curriculum grid of HEI1.

The adjustment of curricular components to what is recommended by the DCN, observed more intensely in the Cuban school and in HEI2, is in direct opposition to the biomedical model of learning, which is highly specialized, fragmented and directed to the use of modern equipment, techniques and drugs - a methodology that is still in force in Brazil, but which has been discouraged by the 2014 DCN. According to Amoretti[39], a professional education within this model, like the one observed in HEI1, contributes to the student's lack of interest in becoming a "family doctor".

It is possible to perceive, in HEI1's proposal, lack of disciplines related to promotion of knowledge about "health management" and "health education", a fact observed with less intensity in HEI2. These points are considered essential to medical professionals' "articulation of knowledge, skills and attitudes"[1]. According to Potyara[40], interdisciplinary knowledge enables the rupture of "scientific alienation", which can strengthen the verticalization of specialties, the typologization of knowledge and a dichotomous reasoning, promoting loss of contact with reality and lack of communication among different areas.

Regarding the analysis of HEI3's curriculum grid, besides the course's extensive number of hours, it is important to draw some comparisons with the Brazilian reality. The inclusion of the disciplines "*Inglés*" (ten semesters - 640 hours) and "*Educación Física*" (four semesters - 320 hours) called our attention, not in terms of professional education, but because this ratifies that the student should be able to understand and analyze international information in the area of health and have a healthy life, enabled by the practice of sports.

The education of Cuban doctors prioritizes disciplines categorized as "Public Health Education", which is exactly the discussion proposed in the article. In HEI3, the weight of these disciplines in the curriculum grid is much higher than the weight given by the Brazilian institutions (32% of the curriculum grid of HEI1 and 38% of the grid of HEI2). The small participation of this category in the Brazilian doctor's education reflects the conflict between teaching and the country's reality, which seems to translate, to some extent, the crisis of the Brazilian public health and the difficulty in retaining doctors in the most remote places of the country, motivating the implementation of PMM.

The shortage of Brazilian doctors working in primary care units is caused, in part, by the conflict that exists between the higher education institutions, which focus on a view of health that is market-oriented and hospital-centered, and the latent need for this professional's action in the Family Health Strategy, having a holistic view and understanding not only the disease, but also the socio-environmental and family issues that are involved. Therefore, the medical identity grounded on an extremely technical conception of medicine is not aligned with a professional education attentive to social

conditions and territorial dynamics, which affects the professional training to act in the midst of these adversities.

Finally, it is important to highlight that the normative instruments mentioned in the current DCN[1] (which must be implemented until the end of 2018) recommend compliance with the "Medical Education Axis" of PMM[2]. However, the effects of these changes have a temporal nature. Thus, we need to advance both in the public and in the academic debate about the social impacts on Brazil's current health model.

Final remarks

The Brazilian public health faces a mix of challenges. This is a fact that started to be discussed before the implementation of SUS. To the development of the article, we focused on the implementation of healthcare in a transversal axis in the undergraduate curricula of medicine courses, as Medeiros and Batista[41] have proposed. It is in this gap in the academic education of undergraduate courses that the biomedical model proliferates and is strengthened. This model does not value social determinants in health, as the doctor-patient relationship is not considered a fundamental element of the treatment. It is based on the rational search for complex means and expensive technology, with little investment in patient's autonomy, affirming a type of medicine whose central category is the disease, not health[42].

The analysis of the curricular matrix of the Brazilian higher education institutions allows us to visualize how much we still need to advance in the configuration of their framework, in order to offer medicine studies within the perspectives of what the Brazilian public health system proposes and needs. The Cuban institution's curriculum is closer to this reality, despite the criticism against Cuban doctors coming to Brazil by means of PMM. At the other end of the continuum, we find the Brazilian public institution that was analyzed here, whose curricular format is still distant from the aspirations of the 2014 DCN[1].

Authors' contributions

All the authors participated actively in all the stages of the preparation of the manuscript.

References

1. Ministério da Educação (BR). Resolução nº 3, de 20 de Junho de 2014. Institui diretrizes curriculares nacionais do curso de graduação em medicina e dá outras providências. Diário Oficial da União. 23 Jun 2001.
2. González JEC, Morales ECL, Ramos AD. Proyecto "Mais Médicos para Brasil": nueva modalidade de colaboración cubana em el exterior. Rev EDUMECENTRO [Internet]. 2015 [citado 26 Abr 2016]; 7(1):171-7. Disponível em: http://www.revedumecentro.sld.cu.
3. Moreno LVD, Vedovato LR. Reflexões sobre o regime de contratação dos médicos cubanos no Programa Mais Médicos. Reinpec. 2015; 1(1):156-82.
4. Presidência da República (BR). Lei nº 12.871, de 22 de Outubro de 2013. Institui o Programa Mais Médicos. Diário Oficial da União. 23 out 2013.
5. Gil AC. Métodos e técnicas de pesquisa social. 5a ed. São Paulo: Atlas; 1999.
6. Scheffer M, Biancarelli A, Cassenote A. Demografia médica no Brasil 2015 [Internet]. São Paulo: Departamento de Medicina Preventiva, Faculdade de Medicina da USP; Conselho Regional de Medicina do Estado de São Paulo; Conselho Federal de Medicina; 2015 [citado 2 Maio 2017]. p. 284. Disponível em: http://www.usp.br/agen/wp-content/uploads/DemografiaMedica30nov2015.pdf
7. Lima RDCGS, Garcia CAS, Kerkoski E, Chesani FH. Programa Mais Médicos no Estado de Santa Catarina: breve relato de experiências iniciais. Tempus. 2015; 9(4):67-80.
8. Ministério da Saúde (BR). Programa Mais Médicos [Internet]. Brasília: Ministério da Saúde; 2015 [citado 12 Maio 2017]. Disponível em: http://maismedicos.gov.br/
9. Almeida MJ, Campos JJB, Turini B, Nicoletto SC, Pereira L A, Rezende LR, et al. Implantação das diretrizes curriculares nacionais na graduação em medicina no Paraná. Rev Bras Educ Med. 2007; 31(2):156-65.
10. Presidência da República (BR). Lei nº 9.394, de 20 de Dezembro de 1996. Estabelece as diretrizes e bases da educação nacional. Diário Oficial da União. 23 Dez 1996.
11. Conselho Nacional de Educação (BR). Resolução nº 4, de 7 de Novembro de 2001. Institui diretrizes curriculares nacionais do curso de graduação em medicina. Diário Oficial da União. 9 Nov 2001.
12. Maranhão E. A construção coletiva das diretrizes curriculares nacionais dos cursos de graduação da Saúde: uma contribuição para o Sistema Único de Saúde. In: Almeida MJ. Diretrizes curriculares nacionais para os cursos universitários da área de saúde. Londrina: Rede Unida; 2003.
13. Batista NA, Vilela RQB, Batista SHSS. Educação médica no Brasil. São Paulo: Cortez; 2015.
14. Ministério da Educação (BR). Relatório do Parecer do Conselho Nacional de Educação n° 776/1997 [Internet]. Brasília: MEC; 2017 [citado 20 Nov 2017]. Disponível em: http://portal.mec.gov.br/setec/arquivos/pdf_legislacao/superior/legisla_superior_parecer77697.pdf
15. Pereira IDF, Lages I. Diretrizes curriculares para a formação de profissionais de saúde: competências ou práxis? Trab Educ Saude. 2013; 11(2):319-38.
16. Barros NF. As ciências sociais na educação médica. São Paulo: Hucitec; 2016.

17. Ministério da Saúde (BR). Informe Saúde. Promed: lançado programa para mudar currículo de medicina. Brasília: Ministério da Saúde; 2002 [citado 10 Ago 2017]. Disponível em: http://bvsms.saude.gov.br/bvs/periodicos/informesaude/informe158.pdf

18. Amaral JL. Duzentos anos de ensino médico no Brasil [tese]. Rio de Janeiro: Universidade do Estado do Rio de Janeiro; 2007.

19. Conselho Nacional de Saúde (BR). 12ª Conferência Nacional de Saúde: conferência Sérgio Arouca: Relatório final. Brasília: Ministério da Saúde; 2004.

20. Lampert JB, Aguilar da Silva RH, Perim GL, Stella RCDR, Abdalla IG, Costa NMDSC. Projeto de avaliação de tendências de mudanças no curso de graduação nas escolas médicas brasileiras. Rev Bras Educ Med. 2009; 33(1):5-18.

21. Ministério da Saúde (BR). Secretaria de Gestão do Trabalho e da Educação na Saúde. In: Seminário de formação médica para Atenção Básica [Internet]; 2013; Brasília. Brasília: Ministério da Saúde; 2013 [citado 20 Maio 2017]. Disponível em: http://www.sbmfc.org.br/media/file/documentos/Documento%20s%C3%ADntese%20da%20relatoria%20do%20semin%C3%A1rio%20de%20forma%C3%A7%C3%A3o%20m%C3%A9dica%20para%20aten%C3%A7%C3%A3o%20b%C3%A1sica%-20setembro%202013%20(1)%20(2).pdf

22. Campos GWDS. A saúde, o SUS e o programa Mais Médicos. Rev Med Resid. 2013; 15(2):1-4.

23. Frente Nacional de Prefeitos. Número de médicos cresce, mas eles estão mal distribuídos pelo país [Internet]. Brasília; 2013 [citado 20 Jul 2016]. Disponível em: http://cadeomedico.blogspot.com.br.

24. Melo CF, Baião DC, Costa MC. A percepção dos usuários cearenses sobre o Programa Mais Médicos. Gestao Soc. 2016; 10(26):1302-12.

25. Maciel FR, Branco MAF. Rumo ao interior: médicos, saúde da família e mercado de trabalho. Rio de Janeiro: Fiocruz; 2008.

26. Ministério da Saúde (BR). Secretaria de Gestão do Trabalho e da Educação na Saúde. O PROVAB na UNA-SUS [Internet]. Brasília: Ministério da Saúde; 2011 [citado12 Ago 2016]. Disponível em: http://www.unasus.gov.br/provab

27. Ministério da Saúde (BR). Secretaria de Gestão do Trabalho e da Educação na Saúde. Programa Mais Médicos – dois anos: mais saúde para os brasileiros [Internet]. Brasília: Ministério da Saúde; 2015 [citado 10 Abr 2018]. Disponível em: http://bvsms.saude.gov.br/bvs/publicacoes/programa_mais_medicos_dois_anos.pdf

28. Minayo MCS, Sanches O. Quantitativo-qualitativo: oposição ou complementariedade? Cad Saude Publica. 1993; 9(3):239-62.

29. Ayres JRCM. O cuidado, os modos de ser (do) humano e as práticas de saúde. Rev Saude Soc. 2004; 13(3):16-29.

30. Pinto HA, Sales MJT, Oliveira FPD, Brizolara R, Figueiredo AMD, Santos JTD. O Programa Mais Médicos e o fortalecimento da Atenção Básica. Divulg Saude Debate. 2014; 1(51):105-20.

31. Ministério da Educação (BR). Consulta avançada. Cursos de graduação em medicina no Brasil. E-Mec [Internet]. 2017 [citado 10 Set 2017]. Disponível em: http://emec.mec.gov.br/

32. Machado MH. Os médicos do Brasil: um retrato da realidade. Rio de Janeiro: Fiocruz; 1997.

33. Campion EW, Morrissey SA. Differente model – medical care in Cuba. N Engl J Med. 2013; 4(368):297-9.

34. Silva RJO, Sousa DO. Programa Mais Médico na perspectiva dos atores sociais responsáveis por sua implantação e dos beneficiários no município de Boqueirão, PB. Reunir. 2015; 3(2):59-75.

35. Collar JM, Neto JBA, Ferla AA. Formulação e impacto do Programa Mais Médicos na atenção e cuidado em saúde: contribuições iniciais e análise comparativa. Saude Redes. 2015; 1(2):43-56.

36. Heinzle MRS, Bagnato MLS. Recontextualização do currículo integrado na formação médica. Pro-Posições. 2015; 26(3):225-38.

37. Bonet O. Saber e sentir: uma etnografia da aprendizagem da biomedicina. Rio de Janeiro: Fiocruz; 2004.

38. Gombata M. Política social e política externa: a atuação de médicos cubanos em programas da Venezuela, da Bolívia e do Brasil [dissertação]. São Paulo: Universidade de São Paulo; 2015.

39. Amoretti R. A educação médica diante das necessidades sociais em saúde. Rev Bras Educ Med. 2005; 10(2):136-46.

40. Potyara APP. A intersetorialidade das políticas sociais na perspectiva dialética. In: Monnerat GL, Almeida NLT, Souza RG, organizadores. A intersetorialidade na agenda das políticas sociais. Campinas: Papel Social; 2014. p. 21-40.

41. Medeiros LMOP, Batista SHSS. Humanização na formação e no trabalho em saúde: uma análise da literatura. Trab Educ Saude. 2016; 14(3):925-51.

42. Romano VF. A busca de uma identidade para o médico de família. Physis. 2008; 1(18):13-25.

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