

The decision to be a physician: a Brazil-Portugal multicultural study

A decisão de ser médico: estudo multicultural Brasil-Portugal

Silvia de Melo Cunha¹ silviamelo@unifor.br
Ana Maria Fontenelle Catrib¹ catrib@unifor.br
Aline Veras Moraes Brilhante¹ alineveras@unifor.br
Elaine Saraiva Feitosa¹ elainesfeitosa@gmail.com
Maria Amélia Duarte Ferreira² mameliaferreira@med.up.pt

ABSTRACT

Introduction: The definition of a professional career represents the adolescent's first major decision and, in general, it occurs in a context of indecision, conflicts and transformations, typical of this stage of life.

Objective: To understand the motivations that lead adolescents to choose a medical career in Brazil and in Portugal.

Method: Exploratory study with a qualitative approach, which used open interviews. The participants were 17 Portuguese and 14 Brazilian freshman medical students attending a public university in the north of Portugal and a private university in the northeast of Brazil in 2018. Bardin's Content Analysis was used for the analysis and interpretation of the speeches, using the thematic modality.

Result: Two thematic modalities were identified: intrinsic and extrinsic motivations and six cores of meaning: willingness to help others, natural tendency, Medicine as a science, interest in research, influence of models, professional stability/social status.

Conclusion: Adolescent freshman medical students in Brazil and Portugal showed similar motivations for their professional choice. Intrinsic motivations predominated and the willingness to help others was the most frequent reason for choosing the medical course in both countries.

Keywords: Adolescence; Professional Choice; Motivation; Medicine; Medical Education.

RESUMO

Introdução: A definição de uma carreira profissional representa a primeira grande decisão do adolescente e, em geral, ocorre num contexto de indecisões, conflitos e transformações, típicos dessa fase da vida.

Objetivo: Este estudo teve como objetivo conhecer as motivações que levam adolescentes a escolher o curso de Medicina no Brasil e em Portugal.

Método: Trata-se de estudo de abordagem qualitativa, do tipo exploratório, que utilizou entrevistas abertas. Participaram 17 portugueses e 14 brasileiros, ingressantes no curso de Medicina, de uma universidade pública do Norte de Portugal e de uma universidade privada do Nordeste do Brasil, no ano de 2018. Para análise e interpretação das falas, utilizou-se a análise de conteúdo de Bardin, na modalidade temática.

Resultado: Identificaram-se duas temáticas – motivações intrínsecas e motivações extrínsecas – e seis núcleos de sentido: disposição para ajudar os outros, tendência natural, medicina como ciência, interesse pela pesquisa, influência de modelos e estabilidade profissional/ status social.

Conclusão: Os adolescentes ingressantes em Medicina no Brasil e em Portugal apresentaram similaridade na motivação para a escolha profissional. Prevaleceram as motivações intrínsecas, e a disposição para ajudar os outros foi a razão mais frequente para escolher Medicina nos dois países.

Palavras-chave: Adolescência; Escolha Profissional; Motivação; Medicina; Educação Médica.

¹ Universidade de Fortaleza, Fortaleza, Ceará, Brazil.

² Faculdade de Medicina da Universidade do Porto, Porto, Portugal.

Chief Editor: Rosiane Viana Zuza Diniz.
Associate editor: Danilo Borges Paulino.

Received on 06/22/21; Accepted on 10/23/21.

Evaluated by double blind review process.

INTRODUCTION

The choice of a profession is a continuous process, which develops in a nonlinear way, influenced by the decisions taken throughout life. Choosing a profession is to decide about the future, what to do, the way of living, and above all, it is about choosing who one will be and who one won't be¹⁻³.

The definition of a professional career represents the adolescent's first major decision and, in general, it occurs in a context of indecision, conflicts and transformations, typical of this stage of life, which can make this choice a difficult and painful moment^{2,4-6}.

The professional choice is closely related to the complex concept of Motivation, whose meaning, derived from the Latin '*motivus*' and the verb '*motivare*', resembles movement, which can be conceptualized as what drives an individual's behavior to achieve a certain goal^{7,8}. Being motivated means being driven to take some action. The same individual can have different types and intensities of motivation. Investigating what motivates human behavior is to seek out to understand the reasons for their actions^{8,9}.

Several theories have sought to explain motivation, but none has been universally accepted or capable of encompassing the complexity of human nature and its behavioral aspects. The most frequently mentioned theory in medical education publications is that of self-determination, which recognizes two main types of motivation: extrinsic and intrinsic. In extrinsic motivation, what drives the individual are the expected results, such as rewards or punishments, and in intrinsic motivation, what moves the individual is something inherently interesting or pleasant⁹⁻¹¹.

Motivation is a significant predictor of learning, academic success and determination to continue studying Medicine, and plays an important role in the development of professional identity^{10,12}.

The decision to become a physician means facing challenges and the motivation for this choice has shown to be essential. An unmotivated choice can predispose to a superficial approach to learning and the abandonment of training with serious personal and professional damage¹⁰.

Medicine is a prestigious profession in Brazil and Portugal, where more than half of the physicians work in the public and private sectors. In Brazil, 93% of graduates are fully and exclusively engaged in the practice of Medicine, with different remunerations, when compared to other health professionals. In Portugal, where the job market and medical career progression require a postgraduate degree, the growing shortage of specialization openings in the National Health System has increased the number of physicians without specialization and reduced the expectations of entering a career plan with progressive remuneration¹³⁻¹⁵.

Being historically close, the two countries have some linguistic and cultural similarities and many economic, political and social differences. There is a frequent exchange of medical students and in the last decade the requests for the revalidation of medical degrees of Brazilian physicians in Portugal have increased.

The motivation to practice Medicine has been studied by several researchers in different countries. Some studies have compared their results in different social and cultural realities^{16,17}. There is, however, a scarcity in studies that deal with motivational factors related to choosing a medical career, when comparing Brazil and Portugal.

The knowledge about the motivation for freshman students' professional choice will allow the planning of the curriculum and academic activities that favor learning, the student's adaptation to the University and the construction of their professional identity.

Therefore, the study aimed to understand the motivations that lead adolescents to choose a medical career in Brazil and Portugal.

METHOD

This is a multicultural, exploratory, qualitative study that aimed to answer questions from the universe of meanings, values, attitudes and reasons that permeate the perception of the research subjects, contemplating narratives about feelings and life choices, understanding the complexity of being human and the uniqueness of their reactions in the environment in which they live^{18,19}.

Seventeen students from the Portuguese University and 14 from the Brazilian University were selected, using as criteria for participation being enrolled in the first year of the medical course and being over 19 years old as an exclusion criterion. There was no previous definition of the number of participants, and the criterion of saturation of answers was used to understand the phenomenon, the object of the study. The students were invited in the classroom and those who showed interest in participating made an appointment for the interview, signed the Free and Informed Consent Form and were included as participants.

The medical courses where the study was carried out show important differences between them. The Faculty of Medicine of the University of Porto (FMUP) located in Portugal is 100 years old; student admission occurs annually, and the discipline curriculum consists of two cycles: a cycle of basic studies in life sciences (first three years) and a cycle of clinical practice that integrates medical therapeutics, radiology and special pathological anatomy (last three years). In Brazil, the medical course at University of Fortaleza (UNIFOR), included in the study was created in 2006, of which student admission occurs every semester and the curriculum consists of modules

that integrate disciplines of basic sciences and clinical practice longitudinally in the first four years and the supervised internship (medical internship) in the last two years.

A brief characterization of Higher Education Institutions (HEIs) and of the study participants is shown in Table 1.

Data collection took place from February to April 2018 in Brazil and in September of the same year in Portugal. Open interviews were used, with the following guiding question: "Why did you decide to study Medicine?"

In order to protect the identity of the participants, the letter "F" (Freshmen) was adopted, together with the letter "B" (Brazil); the letter "P" (Portugal); and the numbers that represent each of the participants in each group.

The transcribed interviews were read in depth and analyzed according to Bardin's Content Analysis using the thematic modality method, which consists of searching for the Core of Meaning (CM) that constitutes a communication, following the steps of pre-analysis, material examination, treatment of results and interpretation²⁰.

The thematic analysis started with the reading of the speeches, statements, followed by the development of the manifested meanings, relating the signifiers (semantic structures) with the meanings (sociological structures) that emerged from the material. Therefore, the speeches were articulated with the psychosocial variables, the cultural context and the message production process.

Considering that the theory of self-determination is the most frequently mentioned to define motivation in medical education publications, we decided to previously define the topics of this study in extrinsic and intrinsic motivation. In extrinsic motivation, what defines the choice are the expected results, such as rewards or punishments, and in intrinsic motivation, what drives the individual is something inherently interesting or pleasant⁹⁻¹¹.

The topics and cores of meaning that emerged from the participants' speeches were later compared with theoretical approaches about professional choice.

The study was approved by the Committee for Ethics in Research on Human Beings under number 3,954,616, in compliance with ethical principles, and the guidelines of the National Health Council (CNS, *Conselho Nacional de Saúde*), Resolution N. 510/16. In Portugal, it was approved by the Ethical Committee of the Medical School of Universidade do Porto and Complexo Hospitalar São João.

RESULTS AND DISCUSSION

The analysis of the interviewed freshmen's responses about the motivation for professional choice started from the associated ideas found in the statements, from which six cores of meanings or thematic subcategories emerged, which were later grouped into two topics, shown in Table 2.

For most participants in this study, the professional choice included more than one motivational factor, sometimes

Table 1. Characterization of the universities and medical students.

CHARACTERISTIC	UNIFOR	FMUP
Administrative characteristic of the Institution	PRIVATE	PUBLIC
Number of new students per year	200	245
Teaching and Learning Methodology	Problem-Based Learning	Traditional
Total Workload	8.532 hours	10.080 Hours
Study Participants	14	17
Male gender	4	4
Female gender	10	13
Mean age of the participants (yrs)	18.2	17.8

Table 2. Motivation for choosing a medical course in Brazil and Portugal, 2018.

TOPICS	CORES OF MEANING	UNIFOR	FMUP
Intrinsic Motivation	Willingness to help others	8	10
	Natural tendency	7	3
	Medicine as Science	2	6
Extrinsic Motivation	Interest in research	0	2
	Influence of models	4	2
	Professional stability / Social status	2	6

characterizing intrinsic and extrinsic motivations in the same student, with the results clearly demonstrating that most respondents in Portugal and Brazil are intrinsically motivated. This similarity occurs despite the cultural, social and economic differences between the two countries. A similar result was found in studies that compared the United Kingdom with Spain and Ghana^{16,17}.

Studies carried out in different countries, with quantitative and qualitative methodological approaches, evaluating different generations of medical students, at different times during the course and also analyzing recently graduated students^{12,16,17,21-25} showed similar results, with a predominance of an inherent motivational tendency, a natural source of learning and achievements, considered a critical element in cognitive, social and physical development⁹. Intrinsically motivated individuals are more likely to engage in deeper learning, demonstrate better performance, greater creativity and the development of a strong professional identity¹².

The predominance of an intrinsically motivated behavior indicates the need for learning methodologies that encourage the students' autonomy and favor the development of technical and life skills that include their altruistic and vocational expectations, ensuring their best performance.

Intrinsic Motivation

The influence of intrinsic motivation in choosing a medical career in this study was revealed in the following cores of meaning: willingness to help others, natural tendency and Medicine as a science.

The choice of Medicine as a professional career motivated by humanitarian issues, present in most publications on the subject, is revealed in the scope of this study as the "willingness to help others"; which emerges explicitly and implicitly from the emotional testimonies of adolescents who speak about the desire to embrace, to care for and even to transform the world and make a difference in people's lives. This was present in the narrative of ten Portuguese and eight Brazilian interviewed students, being the most frequently cited reason for studying Medicine. Sometimes they associate this willingness to religious experiences and principles or cases of severe illnesses in family members, but in most reports, it is simply because they like to help.

If I am going to be here on this Earth, on this planet, for a finite time, I want to spend it well, and I feel that helping people is time well spent. (FP2)

I cannot be indifferent to people's suffering, and I have always liked to help. (FP3)

According to the religious principle, I feel in my heart that I can work in this area of caring for, loving and saving lives. (FB4)

I always had the dream of changing the world, its perspective and taking care of those in need, I think being a physician is not just about curing the disease. (FB9)

A recent study carried out in Brazil analyzed the motivations for the professional choice of becoming a physician in recently graduated individuals and found a prevalence of humanitarian issues, such as "helping people", "doing good" and "relationship with the patient"²⁴. In Finland, the "interest in people" was the main reason for wanting to study Medicine in 20 years of research carried out in 1988, 1998 and 2008, with students that had graduated 2 and 11 years before²³, and it is explicit in the report of the FB2 student: "I chose Medicine exactly because of the people".

Quantitative studies have corroborated the prevalence of altruistic and humanitarian reasons in different countries, and some authors have described a greater tendency among female individuals towards social and altruistic interests^{16,21,24}. In this study, eight male freshman students were interviewed, four Portuguese and four Brazilians, and it was observed that the willingness to help was included in the speech of half of the students. The others indicated extrinsic motivations for their professional choice.

The "natural tendency", expressed in most of the reports as an inexplicable decision made since early childhood, mentioned by seven Brazilian female students, three Portuguese female students and no male students, was the second most frequent motivation in the group from Brazil, and the fourth in the group from Portugal.

Being implicit in the answers of those who cannot imagine the possibility of another choice, this natural tendency or inclination, has been described by several authors as a "vocation", from the Latin word *vocatiōne*, whose origin is the verb "*vocare*", meaning "to call", being described as a propensity, an inclination for any type of activity, occupation or profession²⁶.

I never saw myself being anything else since I was a little girl. (FP1)

I remember being 5 years old and passing in front of Hospital São João and saying that 'this is where I want to come'. It has been a dream since then. (FP17)

I have always wanted to be a physician since I was a little girl. (FB6)

Because since I was a child, I couldn't see myself doing anything else. (FB12)

A study carried out in Zaragoza with second-year undergraduate students (75% women and 25% men), showed that approximately 60% of the respondents thought about Medicine before the age of 14, 40% decided to take

the course before the age of 16, and 50% considered it as the only career they could have chosen. Participants who thought and decided earlier are the ones who, in greater percentage, stated that Medicine was the only career that could satisfy them. These results suggest a strong vocational component, probably reinforced by the percentage of women (75%) in the sample²¹.

A Finnish study, which gathered a large sample over 20 years, showed that the relative importance of “vocation” increased over time, being significantly more important for women than for men and appearing as a predictor of satisfaction with the medical profession. A study carried out at Universidade Estadual do Rio Grande do Norte, asked its students about their motivation to study Medicine, and the most frequent answer was personal and vocational skills, which were also related to greater satisfaction with the course and better academic performance^{23,27}.

In Pennsylvania, a study by Wrzesniewski et al.²⁸ showed evidence that indicates greater satisfaction with life and work for respondents who consider their work a “call”, even when income, education and occupation were controlled.

Scientific interest in Medicine and curiosity regarding the human body functions are the associated ideas that define the Core of Meaning of “Medicine as science”, which represented the second most frequently mentioned motivation in the Portuguese group and the fourth in the Brazilian group, being cited by six Portuguese and two Brazilian students in this study.

I really liked the knowledge I was able to obtain. (FP4)

Initially, I fell in love with the human body, how it works, how this is possible. (FP15)

I am very interested in learning about the human body. (FB1)

Qualitative studies in the Netherlands and quantitative ones in Norway, Spain and the United Kingdom described similar results to those observed in the Portuguese group, where interest in science and in helping people were the main reasons for following a medical career^{16,17,25,29-31}.

Here, a difference was observed between the groups: only two Brazilians mentioned the interest in “learning about the human body” or “in the subject”, and always associated with other motivations. No mention of this category was found in other studies carried out in Brazil^{22,24,27}.

Extrinsic Motivation

In this study, the extrinsic motivation in the professional choice was presented in the following cores of meaning: professional stability/social status, interest in research and influence of models. The previously observed similarity

between the groups of Portuguese and Brazilian students was no longer demonstrated, with the differences between the groups studied in this category becoming evident.

While Portuguese freshman students indicated professional stability/social status and interest in research as priorities for their choice, the Brazilian students’ motivation focused on the influence of models.

The “influence of models” was disclosed in the answers of Brazilian adolescents participating in this study, who indicated their admiration for physicians, family members or not, as a motivational factor for practicing Medicine. In Portugal, having a family member who was a physician was mentioned by two students. In Brazil, the choice of “following in the steps” of someone, the admiration for physicians and “trying to mirror someone” denote the relevant role of the influence of models in the professional choice of four freshman students.

I think having my father as a physician I admire; I got it to follow in his footsteps. (FB7)

Because I think it is a very beautiful profession and there are some physicians who I admire a lot and I try to mirror myself on them. (FB13)

I had a lot of influence from a family member. I got my inspiration from him. (FB12)

A study carried out in Spain showed that 70% of second-year medical students said they had been influenced to make a career choice, and the most frequently mentioned influences were: family pressure (16%), contact with the disease (15%), presence of physicians in the family (12%), television (11%), tutors (10%) and friends (5%). When they evaluated the influence factor only in the group of students who had medical relatives, this was the main influence factor (90%), demonstrating that this group made the decision for themselves at a significantly lower percentage than the rest of the assessed students²¹.

In the Netherlands, a qualitative study with high school students highlighted that growing up in a family with medical professionals increased the students’ motivation to study Medicine and facilitated the access to internships in the health area, providing experiences in medical care²⁵.

The “interest in research”, or the desire to be a researcher, was only present in the answers of the Portuguese students and this result may reveal, in addition to cultural differences about the importance of research in each country, differences in the profile of the two Universities.

Medicine was the option that could more easily lead me to do research, I always dreamed of being a researcher. (FP6)

Initially I was undecided between two courses: Medicine or Bioengineering, but what I really wanted

was to do research and Medicine opens up many other doors, the research is much better. (FP16)

In the last two decades, interest in research has been pointed out in studies on motivation carried out in Europe, and it was not mentioned in Brazilian studies, probably associated with greater funding opportunities by development agencies, as well as the difference in the workload allocated to the course curriculum activities^{16,17}. In the assessed Portuguese University, the obtaining of a medical degree is linked to the defending of a dissertation and a Master's Degree, which in itself already stimulates the production of knowledge.

The presence of "professional stability/social status" as a motivation for the career choice was observed with the same frequency of "Medicine as science" in the group of Portuguese freshman students, mentioned by six interviewees, and in Brazil, by two students. This core of meaning is disclosed between the lines of the adolescents' answers when they treat Medicine as "the possibility of guaranteeing some stability" or "a nobler profession", but it is also presented explicitly in the voice of those who claim that the greatest opportunities for employment had "some importance in the choice".

I chose Medicine because I like the area of Psychology, but Psychology here in Portugal does not have many opportunities, [...] so it was possible to guarantee some stability, I think it was more or less that, but in terms of vocation, I do not know if it would be the most adequate for me. (FP12)

The opportunities for employment in Medicine showed to be greater and were important for my choice. (FP14)

I decided to go into Medicine because I have a great interest in the mental health area, and I decided to go into Medicine because I think it would have a bigger platform than Psychology. (FB14)

I was studying Nursing, and I liked it, but I wanted something more, I did not feel complete and here I do. (FB11)

Students starting medical school in the years 2000 and 2006 at Universidade Federal de Sergipe disclosed, as motivations for choosing a medical course, the productive field of work, high employability and differentiated remuneration²².

Social status, high income opportunity and employability security were described by Pastor et al.¹⁶ as the motivational factors less often chosen by students in the United Kingdom and Spain, being more frequent among men¹⁷.

For the Finnish, a "good salary" and a "prestigious profession" were frequent motivations for men. It is noteworthy, in the 20-year historical series, the reduction in the relative importance of remuneration and employment opportunities as reasons for entering a medical career²³.

In a study carried out in Brazil, social status was present and associated with the importance of the medical profession in society. The acquired knowledge and working in health care put the physician and even the medical student in a socially prominent position²².

For many, there is a contradiction among freshman medical students when they indicate altruistic and vocational motivations for a profession that represents prestige and power²⁷, and they consider the possibility that the image of Medicine as a symbol of social ascension is the real reason for its choice, not verbalized by the students. For Trindade et al.²², the expressed desire to help others may mean being useful, important and socially recognized as a humane physician, resulting in prestige and social status.

FINAL CONSIDERATIONS

The results of the study helped to demonstrate that, despite the cultural differences and different educational models between the two countries, the assessed adolescents starting medical school showed some similarities regarding the motivation for their professional choice. Each student is motivated by a combination of factors and, although the groups' motivations were different in terms of number of citations, the intrinsic motivations predominated in both groups and the willingness to help others was the most frequently mentioned reason for choosing Medicine in both countries.

On the other hand, a significant difference between the Portuguese and Brazilian students was demonstrated when the scientific interest in Medicine and the interest in research (investigation) were evaluated. This result, probably influenced by cultural issues and the institutional profile, should be a warning regarding the implications for the behavior of future professionals and suggests the need for curricular adjustments in Brazilian medical education institutions to encourage the production of knowledge and conducts guided by the best scientific evidence.

The higher percentage of women in medical schools has been associated with a higher number of participants moved by altruism and vocation and indicate the possibility that the feminization of Medicine is imprinting a humanizing character and a social role in the exercise of the profession. It is important to emphasize, however, that altruism, vocation, humanization and social role are the result of social constructions attributed to the feminine gender and are not "innate" female traits.

The future implications of this study indicate two directions. In the field of medical education, it encourages the use of teaching and learning methodologies that address motivational expectations and awaken the students' scientific interest. In the field of scientific research, it indicates the need

for studies that assess the impact of motivational factors on academic performance and on the development of professional identity and its relationship with the feminization of Medicine.

ACKNOWLEDGMENTS

We would like to thank the Universidade de Fortaleza (UNIFOR) and the Medical School of Universidade do Porto (FMUP), which allowed us to carry out this research, to the medical students at FMUP and UNIFOR, who were willing to participate in the study and to the Scientific Initiation scholarship students of UNIFOR, who dedicated to this research.

AUTHORS' CONTRIBUTION

Silvia de Melo Cunha and Aline Veras Morais Brilhante contributed to the study concept, design, data collection, analysis and interpretation, writing of the manuscript and critical review of the relevant intellectual content. Ana Maria Fontenelle Catrib contributed to the analysis and interpretation of data, writing of the manuscript and critical review of the relevant intellectual content. Elaine Saraiva Feitosa and Maria Amélia Duarte Ferreira contributed to the writing of the manuscript and the critical review of the relevant intellectual content.

CONFLICTS OF INTEREST

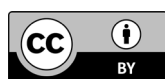
The authors declare no conflicts of interest.

SOURCES OF FUNDING

The authors declare no sources of funding.

REFERENCES

- Filomena K. Mitos familiares e escolha profissional: uma proposta de intervenção focada na escolha profissional à luz de conceitos da teoria sistêmica [dissertação]. Florianópolis: Universidade Federal de Santa Catarina; 2003.
- Almeida FH, Silva LLM. Influência dos pais no processo de escolha profissional dos filhos: uma revisão da literatura. *Psico USF*. 2011;16(1):75-85.
- Bohoslavsky R. Orientação vocacional: a estratégia clínica. 13a ed. São Paulo: Martins Fontes; 2015.
- Lara LD, Araújo MCS. O adolescente e a escolha profissional: compreendendo o processo de decisão. *Arq Ciências Saúde UNIPAR*. 2005;9(1):57-61.
- Gonzaga LRV, Lipp MEN. Relação entre escolha profissional, vocação e nível de estresse em estudantes do ensino médio. *Psicol Argum*. 2014;32(78):149-56.
- Silva JE, Fuzaro CM, Pacheco MMDR. A escolha profissional para adolescentes: panorama de estudos e pesquisas. *Rev Magistro*. 2016;1(13):170-85.
- Pedro AMD. Percursos e identidades. A (re)construção da identidade profissional do docente de enfermagem: olhar do docente [tese]. Lisboa: Universidade Lusófona de Humanidades e Tecnologias; 2011.
- Wise RM. Motivação: teorias motivacionais do comportamento humano. *Rev Cienc Gerenc*. 2018;22(36):134-41.
- Ryan RM, Deci EL. Intrinsic and extrinsic motivations: classic definitions and new directions. *Contemp Educ Psychol*. 2000;25(1):54-67.
- Kusurkar RA, Cate TJT, Van Asperen M, Croiset G. Motivation as an independent and a dependent variable in medical education: a review of the literature. *Med Teach*. 2011;33(5):e242-62.
- Lucena Filho EL. Motivação: confluências e divergências nas abordagens teórica. *Rev Psicol Saberes*. 2019;8(12):154-86.
- Wasityasturi W, Susani YP, Prabandari YS, Rahayu GR. Correlation between academic motivation and professional identity in medical students in the Faculty of Medicine of the Universitas Gadjah Mada Indonesia. *Educ Med*. 2018;19(1):23-9.
- Scheffer MC, Guerra A, Guilloux AGA, Brandão APD, Miotto BA, Almeida CJ, et al. Demografia médica no Brasil 2020. São Paulo: FMUSP, CFM; 2020.
- Santana P, Peixoto H, Duarte N. Demografia médica em Portugal: análise prospetiva. *Acta Med Port*. 2014;(27):246-51.
- Santos SPM. A escola de medicina e a construção de uma identidade profissional [dissertação]. Porto: Universidade do Porto; 2019.
- Pastor MA, López-Roig S, Sánchez S, Hart J, Johnston M, Dixon D. Analysing motivation to do medicine cross-culturally: the international motivation to do medicine scale. *Esri Psicol*. 2009;2(2):3-9.
- Clayton B. Motivation for studying medicine: assessing the similarities between UK and Ghanaian medical student. *Healthc Low Resour Settings*. 2016;4(1):10-6.
- Minayo MCS. O desafio do conhecimento: pesquisa qualitativa em saúde. 14a ed. São Paulo: Hucitec; 2014.
- Jardim HG. Contemplar o adolescente no 3º milénio. Funchal: Imprensa Académica; 2016.
- Bardin L. Análise de conteúdo. São Paulo: Edições 70; 2016.
- Soria M, Guerra M, Gimenez I. La decision de estudiar medicina: características. *Educ Méd*. 2006;9(2):91-7.
- Trindade LMDF, Vieira MJ. Curso de Medicina: motivações e expectativas de estudantes iniciantes. *Rev Bras Educ Med*. 2009;33(4):542-54.
- Heikkälä T, Hyppölä H, Vänskä J, Aine T, Halila H, Kujala S, et al. Factors important in the choice of a medical career: a Finnish national study. *BMC Med Educ*. 2015 Oct;15:169.
- Scheffer MC, Guilloux AGA, Dal Poz MR, Scharaiber LB. Motivos da escolha da profissão e perfil dos médicos recém-graduados no Brasil. *Rev Assoc Med Bras*. 2016;62(9):853-61.
- Wouters A, Croiset G, Isik U, Kusurkar RA. Motivation of Dutch high school students from various backgrounds for applying to study medicine: a qualitative study. *BMJ Open*. 2017;7:e014779.
- Michaelis dicionário escolar da língua portuguesa. 4a ed. São Paulo: Melhoramentos; 2016.
- Cardoso Filho FAB, Magalhães JF, Silva KML, Pereira ISSD. Perfil do estudante de medicina da Universidade do Estado do Rio Grande do Norte (UERJN), 2013. *Rev Bras Educ Med*. 2015;39(1):32-40.
- Wrzesniewski A, McCauley C, Rozin P, Schwartz B. Jobs, careers, and callings: people's relations to their work. *J Res Pers*. 1997;31(1):21-33.
- Vaglum P, Wiers-Jenssen J, Ekeberg O. Motivation for medical school: the relationship to gender and specialty preferences in a nationwide sample. *Med Educ*. 1999 Apr;33(4):236-42.
- Gasiorowski J, Rudowicz E, Safranow K. Motivation towards medical career choice and future career plans of polish medical students. *Adv Health Sci Educ Theory Pract*. 2015;20(3):709-25.
- Gyorffy Z, Birkás E, Sándor I. Career motivation and burnout among medical students in Hungary – could altruism be a protection factor? *BMC Med Educ*. 2016;16:182.



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.