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Contributions from Medical graduates for the course evaluation

Contribuições de egressos de Medicina para a avaliação do curso

Maria Helena Senger[1] mhsenger@pucsp.br
Juliana Corrêa Meziara de Castro[2] julianameziara@gmail.com

ABSTRACT

Introduction: The course at Centro Universitario de Votuporanga (UNIFEV) was approved in 2012 with the first class graduating in 2018. The Course's Pedagogical Project (PPC, Projeto Pedagógico do Curso), based on the National Curriculum Guidelines (DCN, Diretrizes Curriculares Nacionais), uses active methodologies, and among them, problem-based learning.

Objective: To analyze the professional profile, career trajectory, and adaptation to the job market of a doctor graduated from UNIFEV, the strengths and weaknesses of the PPC, based on the perceptions of the alumni.

Material and Method: The cross-sectional, descriptive and quanti-qualitative study, approved by the Research Ethics Committee, involved a population of graduates (n=114). A semi-structured questionnaire was applied, to provide personal, professional, and academic information.

Results: Eighty graduates, distributed in the state of São Paulo with greater female representation (71.2%), answered (70.2%) the questions. In the first year after graduation, 41.5% worked in Urgency/Emergency Care and 18.4% in Primary Care, considering 282 positions (2.6±1.2 positions per person). Sixty-seven (83.3%) graduates obtained student loans, unrelated to the current monthly salary range (10 or more minimum wages for 55.5%). Few alumni were enrolled in a residency program (n=27; 33.8%); many still intend to do it. Most of them (72.5%) attended a preparatory course for residency. The integration of areas, the ability to work as a team, the knowledge about the DCN and PPC and the occurrence of moments of emotional tension/stress were mentioned by most of the interviewees (88.0 to 100%).

Conclusion: There was a significant rate of responses with contributions to a curriculum closer to the students' needs, with emphasis on learning emergency and pediatric topics and on the necessary care for the students' mental health. The course was highly rated by the respondents and student loans showed to be an important policy, considerable results for the young institution. The study represents the first step towards creating a stronger link between the institution and its graduates, helping to design the institutional culture of frequent monitoring of their trajectories and impacting the evaluation of the curriculum, insofar as it offers, to the course managers, a diagnosis to maintain the successes while being alert to possible adjustments.

Keywords: Medicine; Program Evaluation; Medical Education.

RESUMO

Introdução: *O curso de Medicina do Centro Universitário de Votuporanga (Unifev), aprovado em 2012, teve a primeira turma graduada em 2018. O Projeto Político Pedagógico do Curso (PPC), baseado nas Diretrizes Curriculares Nacionais (DCN), utiliza de metodologias ativas, entre elas a aprendizagem baseada em problemas.*

Objetivo: *Este estudo teve como objetivo analisar o perfil profissional, a trajetória e a adaptação ao mercado de trabalho do médico formado pelo Unifev, além das fragilidades e fortalezas da matriz pedagógica, a partir das percepções dos egressos.*

Método: *Trata-se de um estudo transversal, descritivo e qualiquantitativo do qual participaram 114 egressos. O estudo foi aprovado pelo Comitê de Ética em Pesquisa do Unifev. Aplicou-se, via Google Forms, um questionário semiestruturado sobre dados pessoais, informações profissionais e acadêmicas, opiniões referentes à formação dos egressos e o PPC.*

Resultado: *Responderam 80 (70,2%) egressos distribuídos no estado de São Paulo, com maior representação feminina (71,2%). No primeiro ano após a formatura, 41,5% atuavam na urgência/emergência e 18,4% na atenção primária, com 282 postos de trabalho ocupados (2,6 ± 1,2 postos por pessoa). Sessenta e sete (83,3%) egressos obtiveram financiamento estudantil, sem relação com a faixa salarial mensal atual (dez ou mais salários mínimos para 55,5%). Poucos (n = 27; 33,8%) estavam inseridos em programa de residência; muitos ainda pretendem cursá-lo. Grande parte (72,5%) realizou curso preparatório para residência. A integração das áreas, a capacidade para o trabalho em equipe, o conhecimento das DCN e do PPC, e a ocorrência de momentos de tensão emocional/estresse foram referidos pela maioria dos respondentes (de 88,0% a 100%).*

Conclusão: *Houve expressiva taxa de respostas com contribuições para um currículo mais próximo das necessidades dos alunos, ênfase na aprendizagem de temas das urgências e da pediatria, e no necessário cuidado com a saúde mental dos estudantes. O curso foi bem avaliado pelos respondentes, e o financiamento estudantil provou ser uma importante política, com resultados consideráveis para a jovem instituição. O estudo representa o primeiro passo para a criação de um elo mais robusto entre a instituição e seus egressos, auxiliando na concepção da cultura de acompanhamento frequente de suas trajetórias e repercutindo na avaliação do programa curricular, na medida em que oferece aos gestores do curso um diagnóstico para manter os acertos e alertar sobre possíveis ajustes.*

Palavras-chave: *Medicina; Avaliação Educacional; Educação Médica.*

[1] Pontifícia Universidade Católica de São Paulo, Postgraduate Program in Health Professions Education, Sorocaba, São Paulo, Brazil.
[2] Centro Universitário de Votuporanga, Votuporanga, São Paulo, Brazil.

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INTRODUCTION

The teaching of medicine, until recently adopted by most schools in Brazil, was aimed at the disease and not the patient. It has undergone curricular modifications over the years, in an attempt to become more critical, reflective and with greater social responsibility, in addition to covering the area of human sciences[1,2]. The National Curricular Guidelines (DCN, *Diretrizes Curriculares Nacionais*) for medical courses, initially published in 2001, have prompted such changes [3]. The 2014 DCN can be considered, in some of their topics, as an expansion of the previous ones, but they emerged from them, especially within the scope of interdisciplinarity[4,5]. In the proposed model, it is understood that society needs doctors capable of promoting health, preventing the most common diseases, having a high-resolution capacity and carrying out therapeutic follow-up appropriately. There is, therefore, an incentive to the training of general practitioners[6].

Moreover, the DCN support the development of skills that should favor the doctor's future performance, serving as a guide, both because they represent an official instrument and because they guide the construction of the course's Pedagogical Political Project (PPC, *Projeto Político Pedagógico*). The PPC, in turn, must subsidize educational actions, translating the institution's intentionality regarding professional training. Therefore, if the DCN represent the basis, the PPC symbolizes the commitment to the future direction of this professional [7].

Finally, only by verifying the implementation and development of the program contained in the PPC can it be stated that the desired direction has been achieved. In other words, institutional evaluation, both internal and external, is the guarantee that the process is being conducted adequately. An important source for obtaining information on these issues is related to graduates, since they have the possibility of comparing two experiences, the current professional one, and the previous academic one[8,9]. Monitoring graduates is an important institutional strategy for obtaining information about the quality of student training and its adequacy to the new demands of society and the job market. In other words, it is a process that encompasses the evaluation of the institutional program offered to the student, analyzing the change they have experienced, as well as their judgment[10-13].

Therefore, checking whether the profile of the doctor one expects to train is being achieved is an institutional duty, despite the difficulties inherent to this process. National and international studies have focused on the topic in search for improvement and adaptation to the demands of professional training, with several reporting the benefits and difficulties of this approach with graduates [10,11,14-21]. In studies in which this type of approach is more systematized and constant, the information is more accurate and shows the importance of the topic more clearly, demonstrating a higher response rate when questionnaires and more consistent data are used[19,20].

The medicine course at Centro Universitário de Votuporanga (UNIFEV), approved in 2012, had its first class graduated in 2018. The PPC was designed according to the 2001 DCN in force at the time, which was used in its entirety as a guide for the creation process, precisely because it is considered a legal framework for curriculum development. It employs active methodologies, including problem-based learning.

At UNIFEV, the Assessment Committee monitors graduates with the support of the Communication and Marketing sector and the Graduate Center. The objectives are to strengthen ties with former students and propose actions capable of consolidating the relationship, identifying critical points for maintaining and improving institutional quality, detecting weaknesses for insertion in the job market, how and which skills were acquired during training and are mobilized in their professional life, contributing to the planning, development and improvement of the teaching-learning process[22].

The present study was proposed to analyze the professional profile, trajectory and adaptation to the job market of doctors trained at UNIFEV, the weaknesses and strengths of the pedagogical matrix, based on the graduates' perceptions.

MATERIAL AND METHOD

This is a cross-sectional, descriptive, quanti-qualitative study, with graduates of the UNIFEV Medicine course in 2018 and 2019 (first and second classes). The support and approval from the institution's management, coordination, the Structuring Teaching Center and the UNIFEV Research Ethics Committee (CAAE 33329120.2.0000.0078) were obtained.

A semi-structured questionnaire was used, containing 80 questions (21 of them open questions), distributed in blocks covering personal data, professional and academic information, complementation of training, implications of academic training in professional life and opinions on integration between disciplines in the basic (basic cycle, first two years of the course) and clinical areas (clinical cycle, third and fourth years). The open questions were related to the justifications for answers obtained when choosing answers to closed questions, being distributed throughout the questionnaire.

The questionnaire was previously applied in a pilot study with medical graduates from the Pontifícia Universidade Católica de São Paulo (PUC-SP), in Sorocaba campus, as well as in courses at Universidade Estadual de Campinas and Universidade Federal de Juiz de Fora, with specific adaptations. to the UNIFEV course[16,17].

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Prepared on the Google Forms platform, the questionnaire generated a link sent to the research participants through WhatsApp. The graduates' data (name, telephone number and email address) were obtained from the course coordination and graduation committees of the aforementioned years, who constituted the key people in the study.

Before starting the questionnaire, the participant received an awareness text, explaining what would be covered in the research and its purpose. After agreeing to participate, the Free and Informed Consent form (TCLE, *Termo de Consentimento Livre e Esclarecido*) was signed and sent to the researcher in charge. The data are protected by the researcher in charge, with backup, for five years, as recommended by the General Data Protection Law[23].

Data collection took place in October 2020. Those who did not respond after the first approach received messages (email, via WhatsApp and other social networks), within 15 days, in an attempt to increase participation in the research.

The frequencies of the variables studied in the sample were analyzed using descriptive and inferential statistics. The Chi-Square and Spearman's Rô tests (r_s for associations) with significance set at 5% were used. For the analysis of job positions and salary range, the variables were transformed into quantitative ones and the normality test was carried out with significance set at 5%, with subsequent analysis for non-parametric variables.

The answers to the open questions were submitted to content analysis, after careful reading, and grouped into categories, obtained by similarity and generating the absolute and relative frequency table (Table 1; Chart 1)[24].

RESULTS

The total number of graduates in the classes of 2018 and 2019 was 114. Eighty graduates (70.2%) answered the questionnaire, of which 57 (71.2%) were female and 23 (28.8%) male. The women were the majority in both classes (59.6% and 75.4%).

The places where 95% of the graduates practice their profession are currently restricted to the state of São Paulo. All eighty practice medicine and 74 (92.5%) indicate that this is their only source of income. In the first year after completing the course, the respondents held 282 jobs, 117 (41.5%) of which corresponded to urgency/emergency shifts and 52 (18.4%) to primary care. A total of 70 (87.5%) graduates worked in primary care and/or urgency/emergency services in the year following graduation.

During the survey, 23 (28.7%) of the participants worked in three types of services, 20 (25.0%) in two; 19 (23.8%) in one. The rest occupied four to six job positions. The average number of job positions resulted in 2.6 ± 1.2 (mean ± standard deviation).

There was a significant, linear and inversely proportional correlation between the number of jobs and monthly income (r_s=-0.31; p=0.006). For 31.4% of the evaluated individuals, as the number of types of activity increased, income decreased. There was no correlation between the type of paying source and monthly income (r_s=-0.04; p=0.7).

As for the monthly income range, 10 (13.5%) respondents earned more than 20 minimum wages; 31 (41.9%) earned from 10 to 20; 18 (24.3%) from five to 10; and 15 (20.2%) up to five. Six participants (7.5%) did not answer this question.

Regarding facing difficulties in being hired as a doctor, 73 (91.3%) denied it and seven (8.7%) reported it in a way that allowed the following categorization: market with a large number of doctors (n=2), need for indication (n=2), difficulty in entering shift lists, requiring contacts for referral (n=2) and failure to comply with the requested requirements (medical residency title; n=1).

When carrying out their professional practice, 48 (60.0%) denied difficulties, while 32 (40.0%) had them. Of the 32, 20 (62.5%) reported insecurity, 7 (22.0%) reported failures in the workplace infrastructure and two (6.2%) felt devalued as doctors. Each of the other three mentioned difficulty in reconciling theory and practice, anxiety/stress, problems with politics and the work team.

The occurrence of moments of emotional tension/stress caused by exhausting physical, emotional and/or psychological conditions was stated by 64 (80.0%) of the respondents. Thirty-one (38.8%) experienced these moments during professional practice, 21 (26.3%) during residency and 14 (17.5%) in the undergraduate course. Two graduates reported that they experienced them on two different occasions. There was no association between sex and such events. When asked to detail these occurrences, 47 (73.4% of those who answered affirmatively) did so, while the remaining 17 (26.6%) did not answer. Table 1, created based on the responses, highlights the most frequent situations.

Table 1. Categorization of responses obtained as an explanation for moments of emotional tension or stress.

Categories of answers	Absolute frequency	Relative frequency
Work overload	28	35.0
Anxiety/Stress	12	15.0
Difficulty reconciling studies	3	3.8
Pressure from bosses	2	2.5
Job insecurity	2	2.6
Total	47	73.4

Source: the authors.

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Fifty-three (66.2%) graduates were not attending residency and the programs mentioned by the remaining 27 were: Internal Medicine (n=6), Gynecology and Obstetrics (n=6), Orthopedics and Traumatology (n=3), Pediatrics (n=3), Surgery (n=3), Anesthesiology (n=2), Radiology (n=2), Family Medicine and Psychiatry (one each).

The reasons given for choosing the specialty were: affinity with the area (n=23; 28.8%), scope and the possibility of subspecialization (n=12; 15.0%). Forty-five (56.3%) graduates did not respond.

Of the evaluated sample, 67 (83.8%) had some type of student loans, 65 through the Student Financing Fund (FIES, *Fundo de Financiamento Estudantil*) and two through the University for All Program (PROUNI, *Programa Universidade para Todos*). Sixty-three responses were obtained about the interference of the need to pay the student loans during the trajectory after completing the course: 36 (57.1%) denied it, 27 (42.9%) affirmed so. To cross-reference these responses with the monthly salary range, data from 58 respondents were used, excluding those whose salary data were not provided. Of the 36 who denied, five (13.9%) earn more than 20 minimum wages; 14 (38.9%) from 10 to 20; nine (25.0%) earn five to 10 and eight (22.2%) earn up to five. Of the 22 who affirmed there was an interference, three (13.6%) earn more than 20 minimum wages; nine (40.9%) from 10 to 20; six (27.3%) from five to 10 and four up to five minimum wages. Both for those who denied or affirmed there was payment interference, as well as in the comparison between the income ranges of the group of respondents as a whole and those who had student loans, the income ranges were distributed in a similar way, corresponding to approximately half with earnings of 10 or more minimum wages and the other half with less than 10. There was no significant association between the need to pay the loan and current monthly income (p=0.897).

Of the 53 respondents who are not in medical residency, 42 (79.2%) had loans and 11 (20.8%) did not. Among the residents (n=27), 20 (74.1%) needed financial support during the course. There was no correlation (r_s=2.17; p=0.140) between being a resident and having had loans during the undergraduate course.

There was no association between attending residency and the interference of student loan payments in their trajectory after completing the course (p=0.7). Regarding the intention to attend residency after paying the student loan, 62 (77.5%) answered affirmatively.

The graduates evaluated aspects of the curriculum regarding the importance of content and activities from different areas, as well as curricular integration (Chart 1).

Chart 1. Answers and categorization of justifications regarding the importance of content and activities from different areas in the training or in the professional life of respondents and their curricular integration.

IMPORTANCE OF CONTENTS AND ACTIVITIES IN TRAINING			
Basic	*VERY IMPORTANT OR IMPORTANT*	*LITTLE IMPORTANT*	*NOT IMPORTANT*
	79 (98.7%)		1 (1.3%)
Justifications (77)	- Base for all knowledge (66; 83.5%); - Relevance in the interconnection of reasoning (9; 11.4%); - Understanding the natural evolution of diseases (1; 1.3%).		- Topics that are useless in daily practice
Clinical Area Grids	80 (100%)		
Justifications (76)	- Basis of good medicine (34; 42.5%); - Clinical practice (22; 27.5%); - Required for medical training (20; 25.0%).		
ADEQUACY OF CONTENTS/ACTIVITIES TO PROFESSIONAL LIFE			
Public Health	*YES*	*PARTIALLY*	*NO*
	74 (92.5%)		6 (7.5%)
Justifications (75)	- They meet the needs of medical practice (63; 85.1%); - Cover everyday life (8; 10.8%); - Global view of health and understanding of the SUS (2; 2.7%).		- Lack of didactics (1; 16.7%); -Relevance for the residency exam (1; 16.7%)
Human Sciences	73 (91.3%)		7 (8.7%)

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Chart 1. Continuation.

ADEQUACY OF CONTENTS/ACTIVITIES TO PROFESSIONAL LIFE		
Justifications (66)	- Important contents (42; 57.5%); - Essential theories for professional life (16; 21.9%); - Little time, but well employed (1; 1.4%)	- Contents that are less important than the others (3; 42.1%); - No understanding of their usefulness (2; 28.6%); - Lack of knowledge (1; 14.2%); - Does not remember what was discussed (1; 14.2%)

INTEGRATION OF CONTENTS AND ACTIVITIES FROM THE AREAS (BASIC, CLINICAL, PUBLIC HEALTH, HUMAN SCIENCES)			
	TOTAL	*PARTIAL*	*NOT INTEGRATED*
	56 (70.9%)	23 (29.1%)	1 (1.3%)
Justifications (69)	- In theoretical and practical activities (55; 98.2%); - Several revisits to the same topic (6; 10.7%).	- There is room for improvement (5; 21.7%); - Lack of practical application (2; 8.7%); - Disorganization at the start of the course (1; 4.3%).	

Source: the authors.

The responses regarding knowledge of the PPC and the DCN are explained in Table 2. Seventy-one (88.7%) participants answered that they knew the PPC and 80 (100%) the DCN, at varying levels.

Regarding the ideal length of internship, 46 (57.5%) reported that two years is sufficient, as it is the ideal time to achieve the minimum amount of experience in practice, prepare students for the job market, have contact with specialties, observe the conduct of cases, awaken trust and autonomy. Thirty-two (40.0%) would like it to be extended to three years as they consider it the most important period of the course and, thus, they would have more time to work under supervision before their professional life starts. Two (2.5%) chose a reduction to one year, without justification.

Former students self-assessed their preparedness for professional work in different areas. Adding the good and excellent perceptions, the following percentages are presented: Internal Medicine (59%); Obstetrics (55%); Mental Health (54%); Gynecology (50%); Public Health (49%); Emergency Medicine (40%); Pediatrics (34%).

The assessment of the importance of graduating from UNIFEV for medical training and/or professional trajectory was answered by 77 (96.3%) graduates. Sixty (78%) indicated that it was essential, excellent, important (very or extremely); for 17 (22.1%) it led to good training, with good teachers and preceptors. All 80 (100%) participants stated that the course contributed to the development of the capacity to work as a team.

The self-assessment regarding their preparation to work in the job market, compared to graduates of other medical courses, showed that 46 (57.5%) felt more prepared, 30 (37.5%) saw no difference and four (5.0%) felt they are less prepared.

Table 2. Self-assessment of the level of knowledge of the National Curricular Guidelines (DCN) and the Course Pedagogical Project (PPC) by the respondents.

	DCN	PPC
Totally	14 (17.5%)	9 (11.2%)
Most of it	39 (48.8%)	34 (42.5%)
Reasonably	21 (26.2%)	24 (30.0%)
Superficially	6 (7.5%)	4 (5.0%)
Does not know	-	9 (11.2%)

Source: the authors.

If they could go back to their undergraduate years to do something that would improve their learning process, 46 (57.5%) indicated they would study more in the first years, 14 (17.5%) would change nothing, 10 (12.5%) would invest more in the production of scientific work, six (7.5%) would make better use of the internship and one (1.3%) would do more complementary activities; three did not respond.

The graduates evaluated the course offered with active teaching-learning methodologies using an open question, resulting in 77 responses. One respondent rated the course as reasonable. The remaining 76 (98.0%) considered it outstanding, excellent, very good, and effective. Sixty-eight (85.0%) answered that the active methodology initially caused strangeness, which was not eported by nine (11.3%). Three (3.8%) did not answer the question.

The preparatory course for entering the residency was attended by 58 (72.5%) respondents. Of these, 32 (55.2%) did so from the fifth year onwards, 23 (39.7%) on the sixth year, one (1.7%) from the fourth year onwards and two (2.5%) from the first year of the undergraduate course. After graduation, 56 (70.0%) attended the preparatory course.

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DISCUSSION

This study evaluated the profile of medical graduates from UNIFEV in an unprecedented way, with only two groups of graduates from a new course, something unusual in the literature. The study brought an important response return rate (70.2%), relevant when compared to other studies using questionnaires[16,25-27]. The fact that they were recently graduated may have contributed to this percentage, as the connection with the institution is still recent. Furthermore, the questionnaire was developed to obtain information objectively, with fast completion, valuing quantitative data, mostly justified in open answers, treated qualitatively.

There were more women in both classes. Sociodemographic studies of medical graduates show that more female doctors enter the market, in agreement with the medical demography of 2020, which describes this fact as the "feminization of medicine"[28].

Large centers are still favorites for professional practice, as younger doctors prefer large cities, close to where they complete their course, as pointed out in other studies[16,17,28]. Updated data on medical demographics show that in Brazil there is an average of 3.85 doctors for every 1,000 inhabitants in municipalities with more than 250,000 inhabitants, a ratio higher than that of other countries, such as Japan (2.45) and Canada (2.75), and similar to that of Australia (3.81). In other words, the difficulty in retaining professionals in small cities still remains a challenge[29].

In the first year after completing the course, the majority of graduates worked in primary care and/or shifts in urgency and emergency services. This shows the importance of adequately training students for such contents and activities during the undergraduate course, reinforced by the feeling of insecurity that many of the respondents pointed out as hindering their professional practice. Although the option to work in primary care or emergency services might be considered temporary until one enters a medical residency program or as an income supplement, qualified training must be pursued by the educational institution, as recommended in the DCN.

The study with medical graduates showed that at least one-third of the graduating class in 2011 worked on urgency/emergency services, a few months after obtaining their degree, regardless of whether they were attending medical residency or not, highlighting the need to build a teaching program about emergencies since the first years of the undergraduate course[30-32]. This would possibly minimize the feeling of unpreparedness to work in the emergency area, mentioned by 40% of the respondents in the present study. On the other hand, insecurity is reported in other studies with recently graduated professionals, and this can contribute to adapting to the reality of work, dispelling false idealizations and to the choice of continuing training in residency programs[33-35].

It is known that 71.9% of doctors under the age of 25 work shifts and those on duty are those who have the highest weekly workload, 80.5 hours on average. In other words, alongside technical preparation during the undergraduate course, the issue of protecting the doctor's quality of life during their career must also be emphasized and worked on, as both factors have consequences for the provided care and their professionalism[28-30]. Added to that is the issue of the exhausting routine and precarious working conditions, with inadequate and scarce equipment, reported in the integrative review by Amoroso et al.[32]. In other words, the risk of personal illness and harm to the assisted population is enhanced by this combination of factors[36].

The monthly income range of 55.4% of participants was greater than 10 minimum wages (above R$10,450.00 or U$1870 in 2020). Data collected in 1996 with graduates from the University of Londrina showed that 63% of them had an income above R$4,000.00[15], equivalent to 35.6 minimum wages at the time or U$3,870. This group had graduated between two and 24 years earlier, while the UNIFEV group is younger, which may account to the difference found herein. On average, the salary of recently graduated individuals from Law school is in the range of R$3,900.00 to R$6,200.00 and those graduated from Dentistry school, between R$2,000.00 and R$6,000.00[37,38].

In other words, remuneration continues to be one of the attractions of the medical profession despite data from 2020 showing that the declared monthly income of Brazilian doctors was R$30,100, the lowest value in a historical series (in 2012 it was R$ 34.1 thousand)[28]. The respondents of the present study have recently entered the job market, who did not report difficulties in being hired. However, to earn such income, the graduates have, on average, three jobs. The inverse relationship between the number of jobs and monthly income suggests that fragmentation motivates or is a consequence of working in services with lower pay and, possibly, lower quality, an important fact to be analyzed and discussed with students in their training process. The graduates are possibly in a hurry to acquire a financial reserve, change their economic status and then submit themselves to the jobs that appear, perhaps without thinking too much on their quality of life. The features of performing multiple tasks and seeking to satisfy their needs rapidly are characteristics of generation Y, of which the respondents are part [29,39].

One of the public policies to facilitate access to higher education is the student loan, a financial subsidy for students enrolled in private institutions[40]. A large proportion (83.8%) of the graduates received this assistance and currently, around half of them have a monthly income of 10 or more minimum

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wages and did not report any losses in their trajectory after graduation due to the fact that they needed to pay the student loan. On the other hand, around 60% of the students who are not pursuing medical residency (n=53) received a student loan and, possibly, many of them still want to do so. One gets the impression that residency may not seem to be the best option in the short term for those who need to pay their loan, perhaps due to the discouraging salary, despite the similar income range between those who had or did not have a student loan.

In practicing the profession, 40.0% reported difficulties, with insecurity being the biggest reason. This may have contributed to the moments of stress experienced by them, along with the excessive workload, highlighting that its occurrence was greater after graduation, affecting men and women equally[41]. It is interesting to observe that 17 (26%) of those who mentioned moments of stress did not provide details about them. Whether this was due to painful memories or simply for greater agility in filling out the questionnaire are possibilities that the present study did not allow answering. In any case, they are people who bring different elements of their suffering. It is crucial to approach that during the undergraduate course, with institutional planning aimed to reduce harm. As described in the study by Slavin et al, changes in the curriculum related to content and time distribution, in addition to the promotion of mandatory resilience and mindfulness experiences, are important for the mental health of medical students and have been associated with a decrease in symptoms of depression, anxiety and stress[42]. These changes can constitute an essential component to improve students' mental health and should be considered in curricular modifications[41-44].

Student mental health is a matter of concern, with significant numbers in Brazil. In a meta-analysis, Pacheco et al (2017) identified the prevalence of different mental health problems, including depression (30.6%), common mental disorders (31.5%), burnout (13.1%), excessive alcohol consumption (32.9%), poor sleep quality (51.5%), excessive daytime sleepiness (46.1%), and anxiety (32.9%), many of them related to lack of motivation and emotional support, in addition to academic overload[45]. International studies also point in the same direction, with a prevalence of anxiety of 33.8% among 40,348 students; and 37.2% of burnout, with emotional exhaustion, reduced personal fulfillment and depersonalization. Considering these data, our study showed lower numbers, since the applied questionnaire was not specific to this topic, and the concern remains that such a relevant subject should be worked on since the beginning of the undergraduate course[46,47].

The affinity with the area and the possibility of subspecialization were the reasons given for choosing the specialties. As these are young doctors, the broad areas were the most often cited among the residency programs. Different aspects influence the decision for a specialty, including the influence of third parties and affinity for the area. The expected income and free time are other relevant factors in this choice, not mentioned by the graduates of this study, possibly due to the fact that they are still in the middle of the decision process, as around half of the participants did not answer this question[48,49].

The graduates showed discernment and understanding about the use of active methodologies during the course. Despite the initial strangeness, there was a perception of their contribution to the integration between the areas and the capacity to work as a team. The collected data do not allow further inferences, but it has been described that activities in small groups favor teamwork[48-51]. Moreover, the graduates' self-assessment demonstrating significant knowledge of the DCN and PPC must have contributed to overcoming difficulties at the beginning of the course, when the curriculum is formally presented and doubts about the methodologies are clarified. After that, the tutors play an important role in clarifying the chosen didactic options presented in the PPC and their consonance with the DCN, favoring the understanding of the objectives, methodologies and requirements of the course.

When self-assessing their learning process, the majority of the respondents pointed out that they should have studied more in the first years, an interesting fact to be presented and discussed with current students.

The two years of internship proved to be sufficient for the majority, but a significant portion (40%) would like it to be extended to three years. Perhaps longer internships will result in reduced insecurity when exercising the profession.

When evaluating the feeling of preparedness for professional performance, it is clear that Internal Medicine is in the first place, with Public Health in the fifth and Emergency Care in the sixth place. This result is a matter of concern when analyzing the responses related to the workplaces occupied since the first year after completing the course. Therefore, a review of the course is necessary to ensure that the work in urgency and emergency situations brings more safety and quality in performance, without compromising the desired generalist training.

During the undergraduate course, 72.5% of those evaluated attended a preparatory course for the residency exam and 70% after graduation, an expected figure in current times[52]. Although the answers obtained to this closed question do not allow an in-depth analysis, it can be inferred that the desire to attend medical residency (MR) is significant for the majority of graduates, corroborating the data that 77.5% intend to complete their residency after paying their student loan. In other words,

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the great appeal of preparatory courses is still the idea that they make it easier to pass admission exams for MR programs.

Attending residency and self-assessment of preparedness for professional practice in all areas did not represent a significant association. A very positive point was the graduates' understanding that their graduation prepared them to take on challenges. This is in line with the study that reports the adequacy of the pedagogical structure when the graduate faces complex situations, comparing the experiences lived during the course with the experiences of future professional practice[15, 53].

Some associations were carried out to identify whether student loans during the undergraduate course had in any way changed the respondents' professional trajectory. The first tried to associate the fact of attending residency and having received a student loan during the undergraduate course, which was not confirmed. In other words, the need to pay the loan did not condition the individual to attend the residency or not, although the interest persists as indicated by the response to the questionnaire. This is in line with a recent issue addressed by the Ministry of Health regarding the extension of the FIES payment grace period for resident doctors[53].

Another assessed association was having had a loan during the undergraduate course and that interfering in some way with the trajectory after finishing the course. In this analysis, it can be observed that there was a similar division of opinions. However, the design of the present study did not allow us to identify what this interference was and whether it caused any harm. In any case, it is possible to infer that the concern with remuneration aimed to pay the student loan commitments may have contributed to the dilemma of choosing whether or not to pursue the medical residency.

A possible weakness of this study concerns the assessment instrument. The search for a simple instrument, easy to use and that can be rapidly filled out may have limited the collection of data that would perhaps be better evaluated in a discursive way. On the other hand, they were given the freedom not to answer the questions. Although this may have occurred due to a lack of clarity and/or understanding of the questions, the non-response rates were not important, with the exception of the topic about moments of stress and the choice of specialty. Also, considering that the questionnaire is a self-perception note, it cannot be denied that there were distortions in some answers, due to the influence of subjectivity.

Finally, significant contributions were made to the evaluation of the curricular program offered to students. However, as pointed out by Lacerda and Abbad, a participant may be satisfied with the course, but does not necessarily transfer what they learned to their work[54]. Therefore, evaluation and monitoring of graduates and multiple sources of data are considered necessary to generate a broader analysis.

CONCLUSIONS

This study can contribute significantly to the creation of a link between the profile of graduates, the academic institution and the development of a PPC closer to the needs of students and future professionals, with greater attention being paid to training in the areas of urgency/emergency care and pediatrics. Another contribution was to reveal the need for surveillance of the students' mental health status, aiming to improve it. The course was well assessed by most respondents and student loans proved to be an important policy, considerable results for the young institution. The course managers have an important assessment here that allows guiding them to maintain the successes and make the necessary adjustments. Therefore, it is expected to help in the conception of the institutional culture of frequent monitoring of the trajectory of its graduates, impacting the evaluation of the curricular program.

AUTHORS' CONTRIBUTION

Maria Helena Senger: Contributed to the study as advisor, supervising the research, writing the manuscript and its review. Juliana Corrêa Meziara de Castro: Contributed to the study with the collection and interpretation of data and the writing of the manuscript.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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