



Scenario of distance higher education in health in Brazil: the situation of Nursing^a

Cenário da educação superior à distância em saúde no Brasil: a situação da Enfermagem
Escenario de la educación superior a distancia en salud en Brasil: situación de la Enfermería

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ABSTRACT

Objective: To analyze the offer of undergraduate health courses in the Distance Learning modality in Brazil, highlighting its main characteristics for Nursing. **Method:** This is a cross-sectional study based on distance health undergraduate courses online data, created between 2005 and 2020. For twelve health degrees, characteristics of the creation and distribution of distance learning were highlighted, emphasizing Nursing courses. Statistical significance tests ($\alpha = 5\%$) and mapping were performed. **Results:** There were 43 undergraduate courses in health, most of which were created between 2017 and 2020 ($\geq 61.4\%$). For Nursing, most courses were created in earlier years (2013 and 2016; 72.7%) ($p = 0.001$). The courses were linked to private institutions, which offered 82,000 seats and are distributed in 1,363 hubs across all states. Courses predominated in São Paulo (23.9%) and non-capital cities (64.3%) ($p = 0.001$). **Conclusion and implications for the practice:** There has been a significant increase in distance education in Brazil's undergraduate health courses. For Nursing, the courses were characterized by private offers located in non-capital cities. However, the regional distribution is still uneven, concentrating hubs in the country's richest and most central regions and away from areas with the greatest health needs.

Keywords: Health; Nursing; Nursing Education; College Education; Distance Learning.

RESUMO

Objetivo: Analisar a oferta dos cursos de graduação em saúde na modalidade de Ensino a Distância no Brasil, destacando suas principais características para Enfermagem. **Método:** Estudo transversal baseado em dados *on line* de cursos de graduação em saúde a distância, criados entre 2005 e 2020. Para doze graduações em saúde, destacaram-se características da criação e distribuição do ensino a distância, enfatizando-se a situação da Enfermagem. Realizaram-se testes de significância estatística ($\alpha=5\%$) e mapa. **Resultados:** Verificaram-se 431 cursos de graduação em saúde, sendo a maioria deles criados entre 2017 e 2020 ($\geq 61,4\%$). Para Enfermagem, o período de maior criação foi anterior (entre 2013 e 2016; 72,7%) ($p=0,001$). Todos os cursos eram vinculados a instituições privadas, que ofertavam 82.000 vagas, distribuídas em 1.363 Polos por todos os estados. Verificou-se predomínio em São Paulo (23,9%) e nas cidades localizadas no interior dos estados (64,3%) ($p=0,001$). **Conclusão e implicações para prática:** Houve aumento significativo de cursos de graduação em saúde no ensino a distância no Brasil. Para Enfermagem, estes se caracterizaram por oferta privada e localizada no interior dos estados. Contudo, a distribuição regional ainda é desigual, concentrando Polos nas regiões mais ricas e centrais do país, e longe das áreas com maiores necessidades de saúde.

Palavras-chave: Saúde; Enfermagem; Educação em Enfermagem; Educação Superior; Ensino a Distância.

RESUMEN

Objetivo: Analizar la oferta de estudios superiores en salud bajo la modalidad de Educación a Distancia en Brasil, destacando sus principales características para la Enfermería. **Método:** Estudio transversal a partir de datos en línea de las carreras de grado en salud a distancia, creadas entre 2005 y 2020. Para doce titulaciones de salud se destacaron características de la creación y distribución de la educación a distancia, destacando la situación de la Enfermería. Se realizaron pruebas de significancia estadística ($\alpha = 5\%$) y mapeo. **Resultados:** Se detectaron 431 carreras de grado en salud, la mayoría de las cuales se crearon entre 2017 y 2020 ($\geq 61,4\%$). Para la Enfermería, el período de mayor creación fue anterior (entre 2013 y 2016; 72,7%) ($p = 0,001$). Todos los cursos estuvieron vinculados a instituciones privadas, que ofrecieron 82.000 plazas, distribuidas en 1.363 centros en todos los estados. Se registró predominio de cursos en San Pablo (23,9%) y en ciudades del interior de los estados (64,3%) ($p = 0,001$). **Conclusión e implicaciones para la práctica:** Se advierte un aumento significativo en los cursos de pregrado en salud en educación a distancia en Brasil. Para la Enfermería, estos se caracterizaron por una oferta privada ubicada en el interior de los estados. Sin embargo, la distribución regional sigue siendo desigual, concentrada en las regiones más ricas y céntricas del país, y lejos de las áreas con mayores necesidades de salud.

Palabras clave: Salud, Enfermería; Educación en Enfermería; Educación universitaria; Educación a distancia.

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INTRODUCTION

The number of Higher Education Institutions (HEIs) in Brazil has been growing steadily since the late 1970s. The increase was influenced by the rapid spread of educational technologies, public policy inductions and the country's economic and social development.¹ These factors favored the expansion of the offer of higher education in the most diverse areas and modalities, especially in the Distance Education (DE) format in the country.¹⁻³

Distance education requires a specific set of didactic-pedagogical elements and previous curricular organization. Students and professors (tutors) use a learning management system based on virtual digital platforms and the learning process occurs without those involved being physically present. Sometimes being mistakenly treated as a synonym for "remote education", which even using the Internet as the main mediating tool for teaching-learning, differs from distance education in that it is a temporary solution in order to provide continuity of pedagogical activities when classroom teaching becomes unfeasible due to particular situations.⁴

In Brazil, the diffusion and development of distance education is just over 20 years old, being officially recognized by legal regulatory acts.^{5,6} Data from the higher education census point to the rapid expansion of Distance Education in the country as higher education modality, tripling the number of students entering its courses in the period from 2017 to 2018.⁷

This modality has also been highlighted in health, being implemented with the argument of training and providing knowledge to residents of remote locations in the country.⁸ Data from the Ministry of Education reveal that, between 2005 and 2020, only for Undergraduate courses in Biomedicine, Physical Education, Nursing, Pharmacy, Physiotherapy, Speech Therapy, Nutrition, Social Work and Occupational Therapy, 501 courses were implemented in the distance education modality (undergraduate and bachelor's degree) offering just over half a million seats.⁹

In this scenario, the higher education market in distance education has incorporated Nursing Education with a growing and significant offer of seats across the country.¹⁰ Previous work indicates that by 2015 there were 75,660 seats for Nursing in this modality, with a relatively small number of 475 graduates between 2010 and 2015¹⁰ and another 288 between 2016 and 2018.⁷ However, regardless of the number, specialists in the area of Nursing Education and the Federal Nursing Council (*Conselho Federal de Enfermagem*, COFEN) warn about the need for debate in relation to this type of education.

They also highlight the contradictions of this type of teaching, which are the most vulnerable points in distance education.^{10,11} Among them, the inability to guarantee training with a solid theoretical basis; inability to qualify professionals within the competence prerogatives defined in the National Curricular Guidelines (*Diretrizes Curriculares Nacionais*, DCNs) of undergraduate Nursing courses; late and fragmented insertion in the health services with training little based on experiences resulting from clinical practices, contact with users and with other health system professionals. Despite this, in recent years the Ministry of Education has been authorizing and recognizing

the creation and operation of undergraduate courses in Nursing in the DE modality.^{10,11}

However, the regional distribution of their teaching centers takes place overlapping the offer for classroom courses, maintaining the concentration of most of the centers in the most developed regions of the country. On the other hand, there are still few studies that analyze the characteristics of this expansion. This condition limits reflections that assist in conducting actions to face the problems associated with the health distance education model in Brazil, especially in the case of Nursing, as this rapid expansion of the distance education offer can imply a negative response for the profession, for the health system and for the entire society.¹²

Therefore, this study analyzed the offer of undergraduate health courses in the Distance Learning modality in Brazil, highlighting its main characteristics for Nursing.

METHOD

This is a cross-sectional study based on the analysis of secondary data available online in the electronic system of the Brazilian Ministry of Education (Cadastro e-MEC). This system gathers the official and administrative database of information related to the HEIs and undergraduate courses in all areas, registered in the Federal System for the Control of Undergraduate Education.⁹ Data collection was carried out in the Advanced Consultation tab of the e-MEC system. Initially, the HEIs that offered undergraduate health courses in the DE modality were included in the research from 2005 to February 2020, date of data collection. Undergraduate courses with a creation date prior to 2005 were not included, as it was only in this year that the DE teaching modality in Brazil became officially regulated.^{5,6}

The following health degrees were considered: Biomedicine, Physical Education, Nursing, Pharmacy, Physiotherapy, Speech Therapy, Nutrition, Social Work, Occupational Therapy, Dentistry, Psychology and Medicine. For these courses, the number of courses offered and the year of their creation were described. In this analysis, courses for the areas of Biology and Veterinary Medicine were not included, as they are professions that do not directly act in the health care of human beings.

Then, it was sought to highlight the main characteristics of Distance Education for Nursing. For this, the following variables were considered: number of courses, seats offered, year of creation, status of the course (in activity, endangered or canceled), type of city where the Hub is located (Capital, Inland of the State and Metropolitan Area, capital excluded), Federative Unit (FU), and region of the country (Northeast, North, Midwest, Southeast and South).

The data were organized in the *Microsoft Excel*® program and then transferred to the *Stata*® software, *version 14.0*. Pearson's chi-square tests were performed to verify statistically significant differences between the number of DE undergraduate courses offered and the year of their creation, and the type of host city of the undergraduate Nursing course Hub and the Brazilian regions. The differences were thus considered when *p-value* < 0.05. The results were presented using tables and a spatial map elaborated with *Q-gis 3.12.0*®, which described the geographical distribution of the Distance Education Hubs.

The research was carried out with aggregates of secondary data available online, which do not contain confidential information that allows identifying the subjects. Thus, appreciation by the Ethics Committee in research involving human beings was waived. However, the ethical issues, guidelines and rules that regulate research in Brazil were respected.

RESULTS

Between 2005 and February 2020, 431 undergraduate courses in health were created in the DE modality in Brazil. For the twelve undergraduate courses analyzed, there was an important growth in the number of these courses and seats (in undergraduate and bachelor's degrees) over these years, with statistically significant differences between them ($p=0.001$).

For Nursing, the first course in the DE modality was created in 2005 and the last in 2016, totaling eleven courses. Its period

of greatest increase was between 2013 and 2016 (72.7%). For the other undergraduate courses, this increase occurred in the subsequent period between 2017 and 2020 (69.5%). Biomedicine, Pharmacy, Physiotherapy, Speech Therapy, Nutrition and Occupational Therapy courses were only created from 2013 onwards. In the e-MEC database, there was no undergraduate course in Dentistry, Psychology and Medicine in the DE modality during the period analyzed (Table 1).

For Nursing, eleven undergraduate courses in DE were verified, nine of which were in activity. All linked to private HEIs and offering 82,000 vacancies. Only one DE course was linked to the public network and offered a degree course with 240 vacancies, but it has already been canceled (Table 2).

In Brazil, it was verified that there were 1,363 hubs of these active undergraduate courses in DE in Nursing, distributed in all 26 states and in the Federal District. The state of São Paulo stood out for concentrating 23.9% of the Hubs, followed by the state of

Table 1. Year of creation of undergraduate courses in Health in the DE modality in Brazil, 2005-2020.

Undergraduate course	Year of course creation										<i>p-value</i> ¹
	2005 to 2008		2009 to 2012		2013 to 2016		2017 to 2020		Total		
	N	%	N	%	N	%	N	%	N	%	
Biomedicine	0	0.0	0	0.0	4	9.1	40	90.9	44	100.0	
Physical Education	8	5.5	8	5.5	29	19.9	101	69.2	146	100.0	0.001
Nursing	3	27.3	0	0.0	8	72.7	0	0.0	11	100.0	
Pharmacy	0	0.0	0	0.0	11	25.6	32	74.4	43	100.0	
Physiotherapy	1	2.3	0	0.0	11	25.0	32	72.7	44	100.0	
Speech Therapy	0	0.0	0	0.0	1	25.0	3	75.0	4	100.0	
Nutrition	0	0.0	0	0.0	12	25.0	36	75.0	48	100.0	
Social Service	17	16.8	10	9.9	12	11.9	62	61.4	91	100.0	
Occupational Therapy	0	0.0	0	0.0	1	20.0	4	80.0	5	100.0	
Total	29	6.5	18	4.0	89	20.0	310	69.5	431	100.0	

Notes: 1- Person's Chi-square test.

Source: e-MEC Portal, 2020.⁹

Table 2. Characterization and offer of seats in undergraduate Nursing courses in the DE modality according to Administration and Degree in Brazil, 2005-2020.

Characterization	Activity							
	Active		Endangered		Canceled		Total	
	Courses	Seats	Courses	Seats	Courses	Seats	Courses	Seats
Administration								
Public					1	240	1	240
Private	9	82,000	1	240			10	82,240
Degree								
Undergraduation					1	240	1	240
Bachelor's degree	9	82,000	1	240			10	82,240
Total	9	82,000	1	240	1	240	11	82,480

Source: e-MEC Portal, 2020.⁹

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Minas Gerais with 9.2% and by Bahia with 6.7%. Considering the Brazilian macro-regions, the number of Hubs in the Southeast was the largest in the country with 37.7%, followed by the Northeast with 25.9%. The North (13.3%), South (11.9%) and Midwest (11.2%) regions presented the lowest proportions (Figure 1).

There was a statistically significant difference ($p\text{-value}=0.001$) in the distribution of the location of the Hubs of Nursing

undergraduate courses in the DE modality according to the type of city and region of the country. The results indicated that 64.3% of the Hubs were implemented in cities located in the inland of the states, ranging from 49.2% in the South to 70.0% in the North. However, the concentration of Hubs in the capitals of the Midwest region (28.1%) and in the metropolitan areas of the South region (42.5%) also stood out (Table 3).

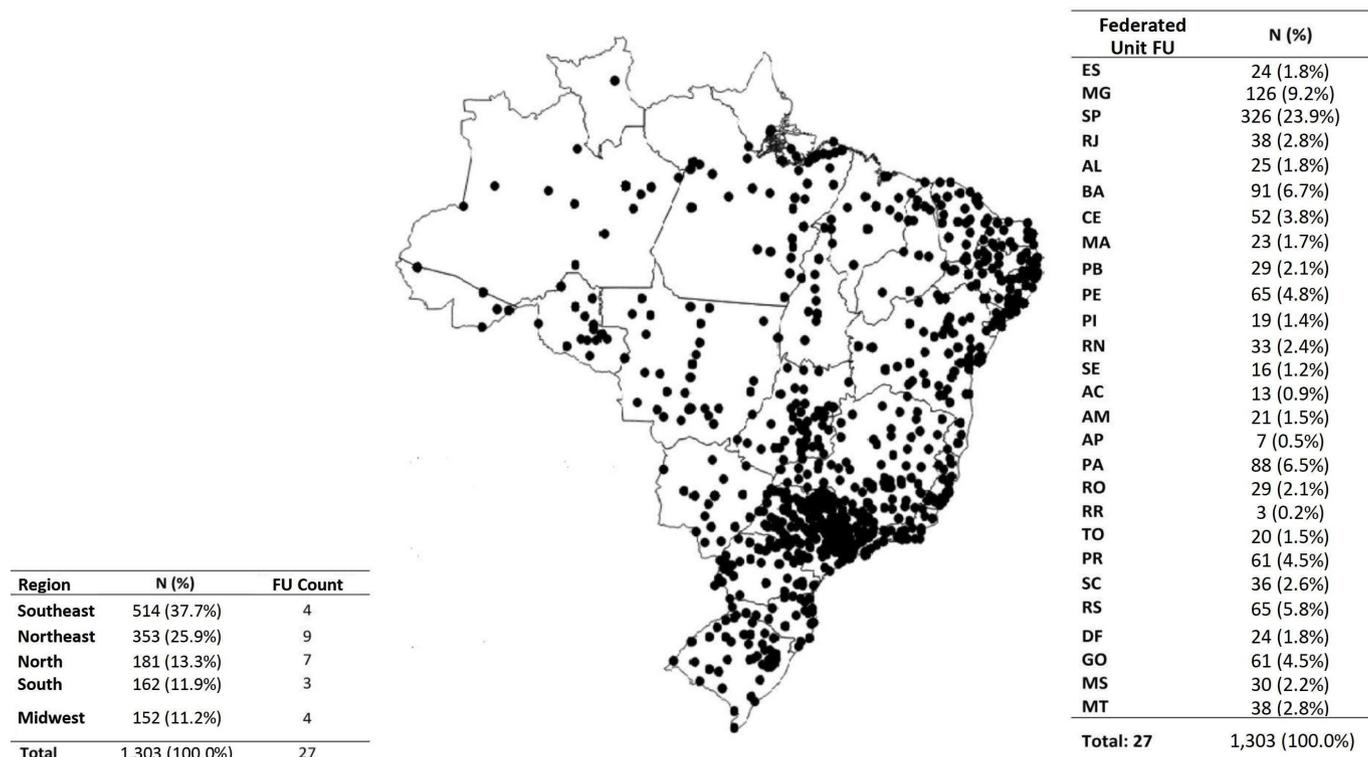


Figure 1. Geographic distribution of the Hubs of undergraduate DE courses in Nursing in Brazil, 2020

Source: e-MEC Portal, 2020.⁹

Table 3. Location of the Hub of undergraduate Nursing courses in the DE modality in the states according to the Brazilian regions, 2020.

Regions of country	Location of the Nursing DE Hub						p-value ²
	Capital		Metropolitan area ¹ , capital excluded		Inland of the state		
	N	%	N	%	N	%	
Northeast	61	17.3	63	17.8	229	64.9	
North	40	17.9	27	12.1	156	70.0	
Midwest	43	28.1	18	11.8	92	60.1	0.001
Southeast	57	11.1	117	22.8	340	66.1	
South	10	8.3	51	42.5	59	49.2	
Total	211	15.5	276	20.2	876	64.3	

Source: e-MEC Portal, 2020.⁹

Notes: 1- Municipalities belonging to the Metropolitan Regions (MRs) or Integrated Development Regions (IDRs) or Urban Clusters (UCs); 2- Pearson's Chi-square test.

DISCUSSION

The research showed a relevant increase in the offer of undergraduate courses in health in the DE modality in Brazil, corroborating with a survey carried out in 2018, which highlighted that, in the period from 1993 to 2013, undergraduate courses in health with distance learning already presented significant expansion in Brazil, with the private sector responsible for most of this growth.¹³

For Nursing, there was a high number of active seats (n=82,000) and these could be attended in 1,363 Hubs. However, previous studies indicate that, for Nursing, there would be a distortion between the volume of seats offered and effective enrollments, which is characterized by the idleness of almost 80% of the seats offered in the distance modality.^{11,14} Part of this situation can be the result of the heterogeneous geographic distribution of these Hubs within the country.

Nursing was one of the first professions to offer undergraduate courses in the DE modality, and the opening of its courses took place until 2016.¹⁰ For other health degrees, the increase occurred later, between 2017 and 2020. The reasons for this time difference in the opening of undergraduate courses between Nursing and other degrees in health can stem from two facts.

The first attributed to the legal opening routines; and the second, most associated with the business model. In 2017, the Ministry of Education (MoE) regulated Decree No. 9,057/2017,¹⁵ through which measures were taken that further expanded the offer of higher education courses in the country, flexibilizing the opening of new courses for health in the DE modality. The absence of the creation of new DE courses for higher education in Nursing as of 2016 can also result from the regulation instituted by Decree No. 9,237/2017.¹⁶ This gave the National Health Council (*Conselho Nacional de Saúde*, CNS) the prerogative to evaluate and issue an opinion on the regulatory acts of authorization and recognition of undergraduate Nursing courses together with the Ministry of Education. In addition, the CNS itself has been drafting resolutions, formally opposing the offer of undergraduate health courses in DE.¹¹ Until then, the need for the opinion of the CNS to regulate the offer of courses was necessary only for Dentistry, Medicine, Psychology and Law. Such a requirement may also have contributed to the absence of courses in the DE modality for these undergraduate courses in the e-MEC database throughout the period analyzed in this study.

Regarding the business model, in the last few years it is also possible to observe stagnation in the labor market and salaries for Nursing,¹⁷ which may have reduced the search for these courses by new candidates. Thus, the higher education market seems to have made new accommodation movements with less demand, reconfiguring its market strategies to diversify its offer to other courses in the health area that had their opening rules relaxed since 2017.

Despite this recent restriction, at the beginning of 2020 there were a total of 274,792 active seats for undergraduate courses in Nursing (classroom and distance), almost 30% of them in the DE modality. This condition makes Higher Education in Nursing

in the DE modality the fifth with the highest number of seats in the health area, only behind the Social Service, Physiotherapy, Nutrition and Biomedicine courses.⁹

The greater economic opening to the private sector in the higher education market started with the flexibility promoted by the Law of the Guidelines and Bases of National Education in 1996.¹⁸ This induced the performance of groups and private corporations that organized in the logic of the market to offer a large number of undergraduate courses. As a result, there was greater growth in higher education Nursing courses, including those in the DE modality.⁷ The expressive number of 82,000 authorized seats for undergraduate Nursing in DE, all offered by private HEIs, indicates that this development in Brazil has been influenced by the expansionist prerogatives of the educational market, previously observed for in-person undergraduate courses.¹⁹

However, this “*commodification*” of education and expansion of DE has generated important debates about the validity and quality of private higher education in Brazil.^{7,20} This is because health professions involve several practical situations and the need for development of general and specific competences according to the Nursing DCNs, as well as of technical, social and affective interaction with users and other professionals in the health services. These elements are the most affected by the DE modality.

The inclusion of part of the content in the DE format has also been occurring quickly in in-person undergraduate courses. On 12/06/2019 Ordinance No. 2,117 was published, which authorized the HEIs to extend the DE hour load in the pedagogical and curricular organization to up to 40% in all in-person undergraduate courses, except for the undergraduate medical course.²¹ However, for the COFEN and the Brazilian Nursing Association, this expansion goes against the Nursing DCNs, as it weakens the training of the nurse, which must be essentially in-person.¹¹

Supported by this idea, these entities are fighting for the approval of bills that require training exclusively in in-person courses for the Nursing professionals, arguing that in the DE format it is not possible to adequately qualify the professionals in technical terms, nor make them deal with human relationships, which can contribute to loss of quality of care and to health risks, as well as induce dehumanized and impersonal assistance.^{11,22}

International studies even demonstrate the importance of DE as a possibility for training Nursing human resources.²³ However, challenges posed by the literature also demonstrate the concern with what is most precious for the profession: the development of clinical and relational competences for inter-professional care and performance.^{24,25}

The study highlighted the relevant concentration of the DE Hubs in cities located in the inland of the states (64.3%), which in fact made it possible to implement DE Courses for Nursing in more remote and difficult to access areas, allowing for the democratization of University education. This characteristic strengthens the main argument for the existence of these courses in the country.

On the other hand, the criteria defined in Decree No. 9,235/2017, for *in loco* visits by the course evaluation commissions, establish that these occur only at the Headquarters of these courses, without the need to visit the Hubs,¹⁶ generating important concern. This is because, given the capillarization of these 1,363 active HEIs in Nursing DE in the country, it is possible that there is great variability in the infrastructure of laboratories and of the network of local services for practices and internships, greatly compromising quality of training, especially in the most remote areas of the country, in view of the weaknesses and varieties of conceptions of the practices in these areas.¹¹

Despite the greater capillarity of the Hubs to the inland of the states, there was still a significant part of them concentrated in the metropolitan or capital areas (35.7%) and in the richest and central regions of the country (49.6% in the South and Southeast regions), nearly ¼ being only in the state of São Paulo. This heterogeneous intensity and distribution of the Hubs means that the state of São Paulo alone has almost the same proportion of Hubs as the North and Midwest regions together (24.5%). A study carried out with data from the National Institute of Educational Studies and Research (*Instituto Nacional de Estudos e Pesquisas Educacionais*, INEP) of 2017 highlighted the expansion of the DE modality for Nursing in the Northeast and North;²⁵ however, the high concentration of Hubs in the Southeast region can be evidenced with the data of the e-MEC.

Therefore, there seems to be a particular movement towards the creation and expansion of the DE teaching Hubs in Nursing. This was characterized for occurring towards the inland of the states, but concentrating them in the richest and most central regions of the country. This condition has also been observed for in-person courses,^{10,19} and may have followed the capitalist logic of the education market more than the health need and demand of each region, presenting a direct relationship with the socioeconomic and technological development of the country, since the southern and southeastern states are more urbanized and economically developed. This overlap perpetuates the regional imbalance in the supply of these professionals,^{26,27} and induces more focused academic training for urban epidemiological profiles and far from the qualified care required by rural and forest areas.

Another possibility of this concentration is that, considering these contexts as complexes that offer more job positions, private colleges expanded the offer of seats to less favored sectors of the population and to professionals who already had technical professionalization in Nursing before graduation. This expansion of higher education has been supported by the phenomenon of certification to capillarize DE in the richest regions of the country and with better possibilities for sustainability and return.

In this scenario, although the ordering of the training of human resources in the health field as an attribution to the Unified Health System (*Sistema Único de Saúde*, SUS) was established in the Federal Constitution, it must be considered that, in view of the intense growth and privatization of undergraduate Nursing courses in the DE modality, market logic has prevailed, which made the education sector highly profitable for the private HEIs.¹⁰

This condition also reflects the disconnection between the education sector and the health sector and the health needs of the populations in less developed and socially vulnerable regions.

Despite these results, some limitations should be highlighted. The database used only allowed verifying the date of the year of creation and not the start of the courses. The e-MEC portal analyzed in the survey does not provide the number of graduates for these courses. This data is available on the INEP website, but only until 2018. Between 2010 and 2018, there were 763 graduates.^{7,10} As there is lack of data for 2019 and 2020,^{7,10} it is still not possible to identify the total volume that DE training has already implied in the supply of labor. It is also worth mentioning the scarcity of studies that address the expansion of DE to the areas of health and nursing, making it difficult to compare the results herein found with other studies.

Despite these limitations, it is believed that the results herein presented are a source of information and reflection for several professionals about the repercussions that this expansion of the DE modality brings to them, to Nursing itself and to the field of health, education and the labor market.

CONCLUSION AND IMPLICATIONS FOR THE PRACTICE

The results indicated a relevant increase in the offer of undergraduate health courses in the DE modality in Brazil. For Nursing, its significant expansion occurred at an earlier stage than what has been happening with other undergraduate courses in the health area. This expansion was characterized by a high number of seats, offered by private institutions and the location of its teaching Hubs in the inland of all states of the country. However, the regional distribution of this offer is uneven and still overlaps with that already observed for in-person courses, maintaining the concentration of most of the Hubs in the richest and most central regions and states of the country, and away from areas with greater health needs.

Therefore, the fast and growing offer of DE courses in Nursing mainly raises concern on the quality of these courses. While this training is still concentrated in large centers, it may not take into account the diversity of health conditions and needs of the population and the various organizational characteristics of the Brazilian health system.

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Data collection. Fabiana Alves Soares.

Data analysis. Fabiana Alves Soares. Bruno Luciano Carneiro Alves de Oliveira. Raquel de Aguiar Portela. Karla Kelma Almeida Rocha. Andréa Cristina Oliveira Silva. Rita da Graça Carvalho Frazão Corrêa.

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