

Follow-up of former postgraduate students of a postgraduate nursing program

Seguimento de doutores egressos de um programa de pós-graduação em enfermagem
Seguimiento de doctores egresados de un programa de posgrado en enfermería

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Descritores

Educação de pós-graduação em enfermagem; Programas de pós-graduação em saúde; Pesquisa em enfermagem

Descriptores

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Abstract

Objective: To describe the profile of former postgraduate students of the Postgraduate Nursing Course of the *Escola Paulista de Enfermagem* of the *Universidade Federal de São Paulo*, their professional performance and opinion about the impact caused by the course.

Methods: A descriptive study was carried out with 135 of the 224 former postgraduate students from 1986 to July 2016, who were grouped in three temporal cohorts.

Results: There was an expressive increase in the Doctoral degrees over the three decades, whose former postgraduate students are coming from all regions of the country, especially the Southeast; only three are from other countries. The mean age at admission was 39.8 years, and the permanence in the course was 46.2 months. Most of them are in the labor market, working with teaching (92%), research (82.9%) and management (52.6%). There was a statistically significant difference between the three decades in the following variables: current work condition ($p=0.01$); performance in teaching in a private institution ($p=0.02$); performance in care ($p=0.03$); performance in management in teaching as coordinator of a postgraduate course ($p=0.04$) and as a school Director ($p<0.01$); management in research as a group leader ($p=0.03$); management in care as a hospital director ($p=0.01$) and publication of books ($p=0.01$) and chapters ($p<0.01$). Most said that the Doctoral degree had an impact on academic training (94%), professional growth (94%), personal growth (91%) and increased job opportunities (73%).

Conclusion: Most of the former postgraduate students are working in federal institutions, with their work performance mostly in undergraduate and *latu sensu* postgraduate teaching. Most are developing research with undergraduate and *latu sensu* and *stricto sensu* former postgraduate students. Part of the undergraduate students develops assistance and management in teaching activities in research and assistance. The "professional growth" and "academic training" followed by "personal growth" attributes were the greatest impacts referred to by the former postgraduate students.

Resumo

Objetivo: Descrever o perfil dos doutores egressos do Programa de Pós-graduação em Enfermagem da Escola Paulista de Enfermagem da Universidade Federal de São Paulo, sua atuação profissional e a opinião sobre o impacto produzido pelo curso.

Métodos: Estudo descritivo, realizado com 135 egressos dos 224 doutores titulados no período de 1986 a julho de 2016, os quais foram agrupados em três cortes temporais.

Resultados: Houve aumento expressivo na titulação dos doutores ao longo das três décadas, cujos egressos são advindos de todas regiões do país, especialmente do Sudeste; apenas três são de outros países. A média de idade ao ingressarem foi de 39,8 anos e a de permanência no programa 46,2 meses. A maioria encontra-se inserido no mercado de trabalho, atuando no ensino (92%), na pesquisa (82,9%) e gestão (52,6%). Houve diferença estatisticamente significante entre as três décadas nas seguintes variáveis: condição de trabalho atual ($p=0.01$); atuação no ensino em instituição privada ($p=0.02$); atuação na assistência ($p=0.03$); atuação na gestão no ensino como coordenador de programa de pós-graduação ($p=0.04$) e como diretor de escola ($p<0.01$); gestão na pesquisa como líder de grupo ($p=0.03$); gestão na assistência como diretor de hospital ($p=0.01$) e publicação de livros ($p=0.01$) e capítulos ($p<0.01$). A maioria afirmou que o doutorado produziu impacto na formação acadêmica (94%), no crescimento profissional (94%), pessoal (91%) e aumento na oportunidade de trabalho (73%).

Conclusão: A maior parte dos egressos encontra-se trabalhando em instituições federais, sua atuação no ensino majoritariamente em nível de graduação e pós-graduação *latu sensu*. A maioria encontra-se desenvolvendo pesquisas com alunos de graduação e pós-graduação *sensu latu* e *stricto sensu*. Parcela dos egressos desenvolve atividades assistenciais, de gestão no ensino, na pesquisa e na assistência. Os atributos: "crescimento profissional" e "formação acadêmica" seguida de: "crescimento pessoal" foram os maiores impactos referidos pelos egressos.

Resumen

Objetivo: Describir el perfil de los doctores egresados del Programa de Posgrado de Enfermería de la Escuela Paulista de Enfermagem de la Universidad Federal de São Paulo, su actuación profesional y opinión sobre el impacto del curso.

Métodos: Estudio descriptivo, realizado con 135 egresados de los 224 doctores titulados en el período de 1986 a julio de 2016, que fueron agrupados en tres cortes temporales.

Resultados: Hubo un aumento significativo en la titulación de los doctores a lo largo de las tres décadas, cuyos egresados provienen de todas las regiones del país, especialmente del Sudeste; solo tres de ellos son de otros países. El promedio de edad al ingresar fue de 39,8 años y la permanencia en el programa de 46,2 meses. La mayoría se encuentra insertada en el mercado laboral, con actuación en enseñanza (92%), investigación (82,9%) y gestión (52,6%). Hubo una diferencia estadísticamente significativa entre las tres décadas en las siguientes variables: condición de trabajo actual ($p=0.01$); actuación en enseñanza en institución privada ($p=0.02$); actuación en asistencia ($p=0.03$); actuación en gestión de enseñanza como coordinador de programa de posgrado ($p=0.04$) y como director de escuela ($p<0.01$); gestión en investigación como líder de grupo ($p=0.03$); gestión en asistencia como director de hospital ($p=0.01$) y publicación de libros ($p=0.01$) y capítulos ($p<0.01$). La mayoría afirmó que el doctorado produjo un impacto en la formación académica (94%), en el crecimiento profesional (94%), personal (91%) y aumento de oportunidades de trabajo (73%).

Conclusión: La mayor parte de los egresados se encuentra trabajando en instituciones federales, mayormente con actuación en enseñanza en nivel de grado y posgrado *latu sensu*. La mayoría se encuentra realizando investigaciones con alumnos de grado y posgrado *latu sensu* y *stricto sensu*. Una parte de los egresados realiza actividades asistenciales, de gestión de enseñanza, investigación y asistencia. Los atributos: "crecimiento profesional" y "formación académica", seguidos de "crecimiento personal" fueron los mayores impactos citados por los egresados.

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Introduction

The Doctoral course of the *Escola Paulista de Enfermagem* of the *Universidade Federal de São Paulo* (EPE/UNIFESP) was created in 1986 under the name of Doctoral in Maternal and Child Nursing, on the initiative of professors of the Pediatric and Obstetrical Nursing Disciplines of the then Department of Nursing of this educational institution.⁽¹⁾

Faced with the needs felt by the faculty, eight years after its beginning (1994), this course was re-organized to become a Doctoral Course in Nursing, making it possible to meet the demand of nurses in the various nursing fields and also to meet the performance criteria established by the nursing field of the Coordination for the Improvement of Higher Education Personnel (CAPES - *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*) for postgraduate courses.

In 1995, continuing the process of continuous assessment of postgraduate courses, within the scope of the *Escola Paulista de Enfermagem*, as well as in compliance with the recommendations of the Commission for Assessment of the nursing field at CAPES, in order to make better use of available resources in terms of physical structure, administrative and pedagogical organization, then the existing courses were unified in a single program. The reformulation covered Master's and Doctoral levels, and the first included three fields of concentration: pediatric nursing, obstetric nursing, and adult health nursing.

In view of the changes made in the course, specifically in the Doctoral course, and aware of the importance of carrying out periodic assessments of former postgraduate students, as a way of verifying the efficiency and feasibility of the course's own offer, the coordination and the faculty of the same decided to carry out the first formal survey of their former postgraduate students in order to obtain information about their professional positions after the degree, as well as their opinion on the extent to which the course had prepared them for professional performance.⁽²⁾ This initiative also met one of the recommendations established by the International Assessment Committee during the assessment of Postgraduate Programs developed by CAPES in

the biennium 1996-1997. The Commission pointed out the need to obtain information on former postgraduate students so that they could “judge the program's relationship with employment and market opportunities, as well as to identify cases of shortage or excess of doctors”.⁽³⁾

Since then, the inclusion of follow-up of former postgraduate students in the assessment of graduate programs has been emphasized in the *Planos Nacionais de Pós-Graduação* (Brazilian Postgraduate Plans) as one of the ways to improve the training models and postgraduate policies.⁽⁴⁾

With regard to nursing, the importance of following up the destiny of former postgraduate students was already mentioned in the final considerations of the 1998-2000 triennium assessment field document.⁽⁵⁾ However, the emphasis on this aspect as a way to foster “a richer social insertion” of former postgraduate students has been pointed out in the last decades and can be identified in one of the items of the assessment of the program proposal.⁽⁶⁾

Considering that in 2008 a new restructuring of the Postgraduate Nursing Program (PGNP) of the EPE/UNIFESP was carried out, resulting in its current configuration with a single field of concentration and four lines of research, it was considered necessary to carry out a new survey of the destiny of the former postgraduate students of the program, in order to analyze the alignment of the training of these with the current guidelines of the assessment system of postgraduate programs concerning the nursing field and with the recommendations proposed in the *Plano Nacional de Pós-Graduação* (PNPG – freely translated to National Postgraduate Plan) 2011-2020,⁽⁷⁾ as well as with the *Agenda Nacional de Prioridades de Pesquisa em Saúde* (National Agenda of Priorities in Health Research).⁽⁸⁾ It also seeks subsidies to analyze the proposal established for the former postgraduate student profile and for the planning of strategic actions and goals of the Program.

The basic question to be answered is: where and in what field are the former postgraduate students of the Doctoral course in nursing of the PGNP/EPE-UNIFESP? Thus, the objective of the study was to describe the profile of doctor former postgraduate students of the Postgraduate Nursing Course of the *Escola*

Paulista de Enfermagem of the *Universidade Federal de São Paulo*, their professional performance and the opinion about the impact caused by the course.

Methods

Ethical aspects

This study project complied with the ethical requirements required by Resolution CNS (*Conselho Nacional de Saúde* – National Health Board) 466/12⁽⁹⁾ and was approved by the Research Ethics Committee (REC) of UNIFESP, CAAE (*Certificado de Apresentação para Apreciação Ética* – Certificate of Presentation for Ethical Consideration) 61.106516.9.0000.5505.

Design, place of study and period

This is a retrospective cohort study conducted at EPE-UNIFESP from July to November, 2016.

Population and sample

The population was constituted by the 224 former postgraduate students of the Postgraduate Course of the PGNP/EPE-UNIFESP graduated from its beginning in 1986, until July 2016, which were grouped in three temporal cohorts, corresponding to the three decades of operation of the program, and the sample composed of 135 doctors who answered the questionnaire. Both requirements represented the inclusion criteria.

Data collection procedures

Primary and secondary sources of information were used for data collection. Primary sources were obtained through a questionnaire in digital format and Word, composed of 20 questions that covered aspects related to professional performance in the fields of teaching, research, assistance and academic management and health and nursing services, as well as technical-scientific production after titration. Secondary data, such as: name, address of former postgraduate students, degrees, age, length of stay in the Doctoral course and origin were obtained at the PGNP/EPE-UNIFESP's office, after consent of the Program Coordinator. Students whose contacts were outdated were obtained through peers, counselor or by telephone contact.

After approval of the project by UNIFESP's REC, an invitation letter to participate in the research with information about their objectives, the questionnaire and the Free and Informed Consent Form was sent to each of the former postgraduate students, by electronic means. The choice of this procedure was due to its accessibility, optimization of respondents' time, low cost and quick response. The questionnaire was available for filling in online and in word format for 25 days between October 27 and November 20, 2016.

Data analysis

Data were sent in computerized spreadsheets and submitted to the descriptive analysis, using MS Office Excel® software, version 2016 for database management and the Statistical Package for Social Sciences (SPSS), version 20.0 for processing. In order to characterize the total sample and description of former postgraduate students by the decades of existence of the program, relative and absolute frequencies for the categorical variables were used, as well as mean and Standard Deviation for quantitative variables. In the comparative analysis between the decades of Doctoral training, likelihood ratio tests were used, which are based on the theory of maximum likelihood for analysis of categorical variables.⁽¹⁰⁾ The significance level adopted was 5%, meaning that significant differences will be considered when the descriptive level of the tests (p value) was lower than 0.05 with 95% Confidence Interval (CI).

Results

Of the total of 224 former postgraduate students of the three decades, in the first (1986 to 1995) 14 doctors were qualified, in the second (1996 to 2005) 66 and in the third (2006 to 2016) 144. The mean age of these students enrolled in the course was 39.8 years, ranging from 39.2 in the second decade cohort to 40.4 years in the first decade. The mean length of stay in the program was 46.2 months, ranging from 42.8 in the third decade cohort to 57.2 months in the first decade.

As for the origin, doctors from all regions of the country were qualified, with the majority (140/62.5%) being from the Southeast region, followed by those from the South (46/20.5%), 9.8%) and Northeast (12/5.3%). There were also the qualification of 3 (1.3%) foreign doctors from Peru, Colombia and Africa.

Of the 135 former postgraduate students who answered the questionnaire, five graduated in the first decade, all from the Southeast region, with a mean length of stay of 62.2 months and mean age when they were 45. In the second decade, 50 former postgraduate students answered the survey; 80.0% were from the Southeast region; 10.0% were from the South; 6.0% were from the Northeast; 2.0% were from the Midwest; and one was from abroad (Peru) (2.0%). They remained in the program on mean for 47.7 months, with mean age when they were entitled to be 42.2 years. For the third decade, there were 80 respondents. 62.5% were from the Southeast region, 25.0% from the South region and less frequent from the Central West (8.75%), Northeast and North (1.25% each) and one from outside (Africa). Their mean length of stay in the program was 42.2 months and mean age when they were 42.7 years old.

Of these 135 former postgraduate students, 13 (9.6%) reported receiving a scholarship to study their doctorate, 10 (7.4) had funding for the development of their research, and 12 (8.9%) did a “Sandwich” Doctorate, seven in the country and five abroad, three in the United States, one in Italy and one in Canada.

Data referring to the current working condition, professional performance after the degree in education, assistance, research and management of these former postgraduate students, are shown in table 1, according to the three decades considered. In this way, it can be verified that the majority (91.9%) was inserted in the labor market, independent of the decade of titration and including retirees who continued their work activities. There was a statistically significant difference between the three decades (p=0.01), with a higher proportion of active former postgraduate students in the three decades compared to active or not active retired ones.

When asked about the field of current professional activity, there was a diversity of responses and fields subdivided in decreasing order: teaching (125/92.0%),

Table 1. Current work status and work field of 135 former postgraduate students of the Doctoral program of the PGNP/ EPE-UNIFESP, graduated from 1986 to 2016

Variables	Cohort			Total (n=135) n (%)	P value**
	1986 – 1995 (n=5) n(%)	1996 – 2005 (n=50) n(%)	2006 – 2016 (n=80) n(%)		
Current work status					
Active	3 (60.0)	36(72.0)	76(95.0)	115(85.2)	0.01
Retired and active	0(0.0)	6(12.0)	3(3.8)	9(6.7)	
Retired	2(40.0)	8(16.0)	1(1.2)	11(8.1)	
Performance of professional field*					
Teaching as professors*	5(100.0)	49(98.0)	71(88.8)	125 (92.0)	0.09
Level					
Graduation	2(40.0)	33(66.0)	60(75.0)	95(70.4)	0.35
<i>lato sensu</i> Postgraduate	2(40.0)	21(42.0)	54(67.5)	77(57.0)	0.03
<i>stricto sensu</i> Postgraduate	3(60.0)	22(44.0)	29(36.3)	54(40.0)	0.69
Place					
Public Institution	3(60.0)	28(56.0)	48(60.0)	79(58.5)	0.95
Private Institution	0(0.0)	7(14.0)	21(26.3)	28(20.7)	0.02
Research*	5(100.0)	43(86.0)	65(81.3)	113 (83.7)	0.31
Place					
University/College	3(60.0)	32(64.0)	63(78.8)	98(72.6)	0.15
Hospital	0(0.0)	3(6.0)	5(6.3)	8(5.9)	0.84
Participation in research group	3(60.0)	16(32.0)	29(36.3)	48(35.6)	0.22
Orientation*	3(60.0)	41(82.0)	70(87.5)	114(84.4)	0.28
Graduation	2(40.0)	36(72.0)	61(76.3)	99(73.3)	0.23
Specilization	2(40.0)	29(58.0)	53(66.3)	84(62.2)	0.48
Master's degree	3(60.0)	25(50.0)	32(40.0)	60(44.4)	0.65
Doctoral degree	3(60.0)	21(42.0)	18(22.5)	42(31.1)	0.08
Assistance*	3(60.0)	21(42.0)	22(27.5)	46(34.1)	0.03
Fiel					
Hospital	0(0.0)	12(24.0)	16(20.0)	28(20.7)	0.09
Ambulatory	1(20.0)	7(14.0)	10(12.5)	18(13.3)	0.27
Primary Care	0(0.0)	9(18.0)	13(16.3)	22(16.3)	0.06
Household	0(0.0)	3(6.0)	8(10.0)	11(8.1)	0.12
Place					
Public Institution	0(0.0)	6(12.0)	16(20.0)	22(16.3)	0.07
Private Institution	0(0.0)	7(14.0)	10(12.5)	17(12.6)	0.11
Management*	4(80.0)	28(56.0)	39(48.8)	71(52.6)	0.29
Education					
Undergraduate Program Coordinator	1(20.0)	8(16.0)	7(8.8)	16(11.9)	0.18
Specialization Course Coordinator	1(20.0)	11(22.0)	13(16.3)	25(18.5)	0.22
Postgraduate Program Coordinator	0(0.0)	5(10.0)	4(5.0)	9(6.7)	0.04
Nursing School Director	2(40.0)	2(4.0)	0(0.0)	4(3.0)	<0.01
Research*					
Research group leader	1(20.0)	13(26.0)	17(21.3)	31(23.0)	0.03
Research projects Coordinator	3(60.0)	15(30.0)	19(23.8)	37(27.4)	0.07
Assistance*					
Service/unit manager	2(40.0)	14(28.0)	26(32.5)	42(31.1)	0.68
Hospital Director	0(0.0)	1(2.0)	10(12.5)	11(8.1)	0.01

*It allows more than one answer; **Likelihood ratio

research (113/83.7%), management (71/52.6%) and assistance (46/34.1%), prevailing overlapping of more than one field of action. Among those who were in the field of education, note the exercise as professors at undergraduate and *lato* and *stricto sensu*, postgraduate institutions, mainly in public ones. When comparing the cohorts, a statistically significant difference was found between the proportion of former postgraduate students from the third decade enrolled in the *lato sensu* postgraduate education ($p=0.03$), in relation to the others, and also in their performance in private institutions ($p=0.02$), without this performance among former postgraduate students of the first decade.

Among the former postgraduate students who reported having research activity, among them participation in research groups, the highest percentage was in the cohort of the first decade (60%), but with no statistical difference with the other. On the other hand, in the orientation activity, former postgraduate students of the third decade were those who mentioned it in greater proportion (87.5%), but also with no statistical difference. The place of development of this activity mentioned more frequently was in undergraduate courses, also permeating *lato sensu* and *stricto sensu* post-graduation courses to a lesser extent.

Regarding the performance in the healthcare field, there was a predominance of former postgraduate students of the first decade, decreasing over the following two decades, with a statistically significant difference ($p=0.03$). The former postgraduate students referred to work in the different contexts of practice, highlighting hospital and Primary Care fields, especially in the second and third cohorts, with no statistical difference between the decades.

In the field of management, it is observed that the majority of the former postgraduate students mentioned acting as a service or unit manager (31.1%), while among those who work in the field of education, specialization courses predominated (18.5%) and graduation (11.9%). However, there was no statistical difference between the decades.

Although coordination of the *stricto sensu* graduate course was mentioned by 6.7% of the former postgraduate students and the school board by 3.0% of them, the comparative analysis between the three decades showed significant differences, respectively ($p=0.04$

and ($p < 0.01$), in these positions/management functions in the field of education, lacking the performance as coordinator in the first decade and being more prevalent among former postgraduate students of the second decade. The highest proportion of directors took place among the former postgraduate students of the first decade, without this performance among former postgraduate students of the second decade.

On the other hand, 27.4% of the former postgraduate students answered that they act as project coordinator and 23.0% as leader of research groups, differing significantly ($p=0.03$) only in this last performance, with a higher proportion of leaders of research groups among the former postgraduate students of the 1996 - 2005.

In the assistance management field, there was a statistically significant difference ($p=0.01$) between the three decades, with a higher proportion of former postgraduate students from the third decade who reported that they were Hospital Directors, and did not have this performance among the former postgraduate students of the first decade.

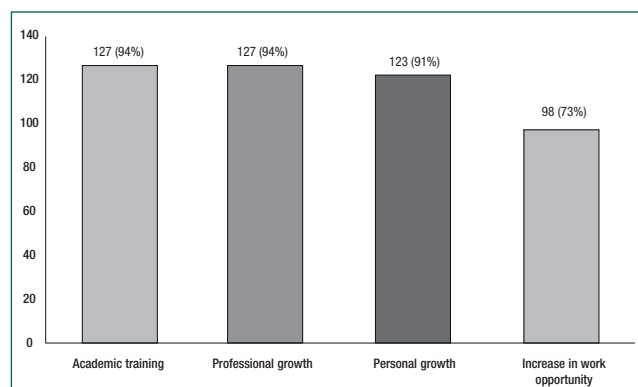
Table 2 presents data on the scientific production of former postgraduate students, partnerships in research activities and associative activities. Regarding scientific production, it is noted that it is represented mainly by scientific articles (88.1%), without, however, presenting statistical difference among the investigated cohorts. However, the production of books and book chapters, although in a lower percentage, showed a statistically significant difference (0.01 and < 0.01 , respectively) in the comparison between the cohorts, being higher in the first of them. In the scientific interaction, the establishment of partnerships between professors/researchers of the institution predominated (79.3%), increasing significantly ($p=0.01$) the proportion of former postgraduate students over the three decades. The reference to the position of management, president and vice-president, in associative activity was reduced, being present in only 5.9% and 2.2% of the answers, respectively.

The greatest impacts mentioned by the former postgraduate students were for the “professional growth” and “academic training”, followed by “personal growth” attributes and to a lesser extent for the “increase in work opportunity” (Figure 1).

Table 2. Technical-Scientific Production and scientific and associative interaction of former postgraduate students of the Doctoral course of the PGNP/EPE-UNIFESP, graduated from 1986 to 2016

Variables	Cohort			Total n=135 n(%)	P value**
	1986 – 1995 n = 5 n(%)	1996 – 2005 n= 50 n(%)	2006 – 2016 n= 80 n(%)		
Technical-Scientific Production after Doctorate*					
Article	4(80.0)	44(88.0)	71(88.8)	119(88.1)	0.86
Book	4(80.0)	21(42.0)	18(22.5)	43(31.9)	0.01
Book Chapter	5(100.0)	33(66.0)	35(43.8)	73(54.1)	<0.01
Technical Material	2(40.0)	23(46.0)	32(40.0)	57(42.2)	0.15
Partnerships in Research Activities*					
Professors/ Researchers in their Own Institution	2(40.0)	36(72.0)	69(86.3)	107(79.3)	0.01
Professors/ Researchers in other Brazilian Institutions	2(40.0)	18(36.0)	37(46.3)	57(42.2)	0.67
Professors/ Researchers in International Institutions	1(20.0)	8(16.0)	14(17.5)	23(17.0)	0.45
Board Member of Class Association *					
President	0(0.0)	6(12.0)	2(2.5)	8(5.9)	0.20
Vice-president	0(0.0)	1(2.0)	2(2.5)	3(2.2)	0.93

*It allows more than one answer; **Likelihood ratio



*It allows more than one answer

Figure 1. Impact caused by the Doctoral course referred to by former postgraduate students of the PGNP/EPE-UNIFESP former postgraduate students from 1986 to 2016 (n=135*)

Discussion

Follow-up of former postgraduate students is an important component of the assessment process of the *stricto sensu* postgraduate programs, since their results can provide subsidies to improve the academic training processes, in order to make the

necessary adjustments to meet the objectives of this level development of the doctor’s career, as well as to meet the challenges arising from the scientific, technological and innovation development needs of the country and the specific field of the programs.

In the present study, the response of 60.2% (135) of the total number of former postgraduate students was obtained, a significant percentage considering that this rate of return is above that mentioned in similar studies.^(11,12)

The number of former postgraduate students showed that there was a continuous and marked growth over the three decades, a situation that reflects the behavior of the postgraduate in nursing in Brazil. However, according to researchers in the field, there is a need to further expand the training of doctors, in order to meet the goal established in the PNPG 2011-2020, to double the number of qualified researchers in 10 years.⁽¹³⁾

When analyzing the age of the students enrolled in the program (mean of 39.8 years), it can be observed that it is similar to that of doctors from other nursing and health programs, as identified in two studies, in which age was respectively <40 years and between 31 and 40 years.^(11,14) However, there are authors who consider that the mean age of former students is high.⁽¹⁵⁾

Meanwhile, the mean length of stay in the program was 46.2 months, ranging from 42.8 to 57.2 months, and the recommendation is the end in 48 months, so the program meets this requirement, despite the longer duration of the first decade.

The postgraduate program offered professionals from all regions of the country, mostly from the Southeast region and to a lesser extent from the Northeast. This fact may have occurred due to the larger contingent of nurses in the state of São Paulo⁽¹⁶⁾ and the displacement of nurses from other states was linked to academic cooperation programs, making clear the need for the Brazilian cooperation. There were also the qualification of three (1.3%) foreign doctors from Peru, Colombia and Africa. The low number of former postgraduate students for other countries deserves reflection, it is necessary to increase the strategic actions to expand this solidarity action with countries with

a lower degree of development in the Postgraduate in Nursing. The training of doctors in the postgraduate programs of the country was encouraged and the reflection of the same occurred at the end of the 20th century, due to the expansion of new courses, mainly in different regions of the country, as a result of the new doctors trained in the programs of the South and Southeast regions.

Brazilian universities have also expanded their collaborations in the training of Nursing doctors in different countries, such as Argentina, Chile, Colombia, Peru, Venezuela, Mexico, Costa Rica, Panama, Bolivia, Angola, Mozambique, among others. These new doctors were responsible for the implementation of graduate programs in Nursing in their countries of origin.⁽¹⁷⁾

The last assessment process of CAPES 2013-2016 revealed that there were 38 Doctoral courses in the country located especially in the Southeast, Northeast and South regions and none in the North region. In this sense, the investments to reduce this academic asymmetry were concentrated in the offer of special groups outside the headquarters, in the Inter-institutional Doctorate (*Dinter - Doutorado Interinstitucional*) modality, evidenced especially with the universities: *Universidade Federal e Estadual do Amazonas*, *Universidade Federal do Acre* and *Universidade de Rondônia*.⁽¹³⁾ The Postgraduate Nursing Program of UNIFESP (PGNP/EPE-UNIFESP), with this collaborative spirit, is responsible for holding 16 professors at *Universidade Federal do Acre*.

Regarding the training of the 135 former postgraduate students, 13 (9.6%) reported having received a scholarship to study their doctorate, 10 (7.4%) funding for the development of their research, and 12 (8.9%) undertook a “Sandwich” Doctorate, seven in the country and five abroad. The number of researchers in the program impacts on the funding of scholarships for students as well as on the possibility of them to hold a “Sandwich” Doctorate. Currently, the program has 39 advisers, seven are researchers from the National Council for Scientific and Technological Development (CNPq - *Conselho Nacional de Desenvolvimento Científico e Tecnológico*) and eight have projects financed

by development agencies, such as the Research Support Foundation of São Paulo State (FAPESP - *Fundação de Apoio à pesquisa do Estado de São Paulo*), the *Programa Pesquisa para o SUS* (PPSUS - Research Program for SUS), CNPq, among others. The researchers’ strategic role is to multiply the possibilities of access to health problems by approaching researchers with related topics as well as bringing resources to the development of new research. This condition favors the entrance of the student in modalities of “Sandwich” scholarships in the country and abroad, thus multiplying the researcher’s performance.

As for academic production, we noticed an increase in the publication of articles by our former postgraduate students between the decades, as well as a significant decrease in the production of books. According to Brazilian authors,⁽¹³⁾ the quantitative and qualitative growth of Doctoral programs impacted their scientific production by 77% in the last three years in relation to the previous one, and can be seen in the international projection of the Brazilian Nursing that jumped from the 11th in the Scopus/SCImago base ranking in 2006 to the 7th place in 2016.⁽¹³⁾ The increase in the publication of articles and the reduction of books and chapters in the field are due to the assessment criteria of academic programs that consider the production of articles as guides to intellectual production, while the books and chapters mostly comprise technical production. In this sense, the programs encourage the dissemination through articles in well-qualified, high-impact journals, which may explain the data found. PGNP/EPE-UNIFESP contributed to this increase due to the requirement of submission or publication of article in the defense period as a strategy for the researcher’s training as well as for the increase of the program’s productivity indicators.

In agreement to this data, a survey carried out with former postgraduate students of a Doctoral course in the field of health and biosciences of the *Fundação Oswaldo Cruz* (Oswaldo Cruz Foundation) in Rio de Janeiro revealed among those who declared to have products generated by the thesis, more than one product was reported by each respondent. There was an increase in the number of articles published as

products of theses and book chapters in the last two cohorts (decades), as well as the relative decrease in the number of books.⁽¹¹⁾

Results point out that the research partnership grew significantly among researchers from the same institution, not the same with other Brazilian and international institutions. Only 23 former postgraduate students evidenced international partnerships in the three decades.

The international insertion of researchers and field programs is expressed through various activities that take place in the framework of agreements, technical cooperation and other types of interinstitutional partnerships, as well as research and event promotion programs that increase mobility actions of researchers and students. Such insertions result in the institutional academic recognition, objectified in the expertise of the professors who, as seen in the assessment of the Programs, have acted in many and diversified work fronts in institutions, associations, societies, scientific journals and international events.⁽¹³⁾

In this sense, internationalization has been focused on the qualification of nursing field training, with expansion of international collaborative networks, exchanges of professors and students, and attraction of foreign professionals for qualification in Brazil, both in Master's and Doctoral courses, reaffirming the excellence of the field programs.⁽¹³⁾ Thus, the need to internationalize the programs is worldwide, and the PGNP/EPE-UNIFESP, when assessed in the last four years and in the last two triennia by the Nursing field of CAPES has received an observation about the need for this increase. In addition, when the scientific production is done in partnership with foreign researchers, the international excellence of the Programs is distinguished and discriminated against.

Thus, the assessment of former postgraduate students leads us to reflect on the urgent need to approach our students with researchers from other programs abroad through the sandwich doctorate, which will allow them to continue partnerships with the researchers who received them. CNPq, CAPES and FAPs (Research Support Foundations) offer scholarships, encouraging such partnerships.

Through the students we can increase several activities of internationalization of the program impacting in the training of the same as in the increment of scientific publications.

Most of the former postgraduate students of the program have a link in public teaching or care institutions. Similar results were obtained in research conducted with African former postgraduate students who completed their postgraduate course in Brazil after returning to their country of origin,⁽¹²⁾ as well as another study carried out with former postgraduate students of a doctorate course in the fields of health and biosciences of the *Fundação Oswaldo Cruz* (Oswaldo Cruz Foundation), Rio de Janeiro.⁽¹¹⁾

In a reflection of the authors of this study, there seems to be a decrease of students in search of the academic doctorate around the world, the programs need to be open to the current tendency of the job market that looks for professionals qualified to occupy positions of relevance in their companies. The world trend is the offer of masters and doctorates that meet this need. Since nursing is an applied science, it is normal that this fact is occurring in the country, which explains the results found in some hospital management positions occupied by our former postgraduate students as well as in the work in *stricto sensu* postgraduate programs.

Studies with former postgraduate students of undergraduate courses *stricto sensu* of the Nursing field, with the scope presented in this article are scarce in the country. A study carried out with former postgraduate students of the Master Course of Angola and Mozambique, showed that they have taken up high positions such as positions of leadership, direction and office of State, in addition to serving as managers of health programs and teaching. They pointed out the “academic training”, “personal growth” and “expansion of the network of relations” attributes as “high impact”.⁽¹²⁾

A study was carried out in which the percentage of graduates who assessed as “high” the degree of impact of the doctorate in professional life was demonstrated, besides being satisfied with the social relevance of their work and with opportunities for new learning and exercise of creativity.⁽¹¹⁾ The greatest impacts mentioned by our former postgraduate students were for the “pro-

fessional growth” and “academic training”, followed by “personal growth” attributes.

One of the limitations of the present study was the non-location of part of the former postgraduate students or by change of electronic address or change of address to update their register in the postgraduate program’s office. Another limitation was also the sample size in the first cohort (1986-1995), with only five participants among the 14 former postgraduate students.

Conclusion

Most of the former postgraduate students are working in federal institutions, with their work performance mostly in undergraduate and *lato sensu* postgraduate teaching. Most are developing research with undergraduate and *lato sensu* and *stricto sensu* former postgraduate students Part of the undergraduate students develops assistance and management in teaching activities in research and assistance. The “professional growth” and “academic training” followed by “personal growth” attributes were the greatest impacts referred to by former postgraduate students.

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Gutiérrez MGR, Barros ALBL and Barbieri M contributed with project design, data analysis and interpretation, article writing, critical review of content and approval of the accepted version for publication.

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