

# Training in preceptorship: perceptions and experiences of participants from a specialization course in distance modality

Formação em preceptoría: percepções e experiências de participantes de curso de especialização na modalidade a distância

*Formación en preceptoría: percepciones y experiencias de participantes de cursos de especialización en la modalidad a distancia*

Iago Gonçalves Ferreira<sup>1</sup> , Silvio César Cazella<sup>1</sup> , Márcia Rosa da Costa<sup>1</sup> 

<sup>1</sup>Universidade Federal de Ciências da Saúde de Porto Alegre – Porto Alegre (RS), Brazil.

## Abstract

**Introduction:** Pedagogical training programs represent important qualification strategies for physicians who work or wish to work as preceptors and/or teachers. In this sense, the Specialization Course in Preceptorship in Family Medicine at *Universidade Aberta do Sistema Único de Saúde/ Universidade Federal de Ciências da Saúde de Porto Alegre* (UNA-SUS/UFCSA) emerges, with the aim of promoting the training of preceptors for the specialty, even during medical residency. **Objective:** To analyze the demographic profile of the Preceptorship Specialization Course participants, as well as their performance, perceptions, benefits, and difficulties during the course activities. **Methods:** A descriptive, observational, and quantitative study, conducted in 2 phases: Population Mapping (Phase 1), carried out from a survey of registration data with the Academic Department of UNA-SUS/UFCSA; and Structured Questionnaire (Phase 2), carried out through the application of a questionnaire on a digital platform. The research included variables such as course class, academic status, gender, age, state, and city of origin of the participants, in addition to perceptions, benefits, and difficulties during the course. The perceptions about the course were analyzed using an adapted version of the Constructivist On-Line Learning Environment Survey (Colles) tool. **Results:** In the Population Mapping Phase, 2,530 students and alumni were identified in the three editions of the Specialization Course in Preceptorship, with a predominance of female participants (65.4%) and from the Southeast region (48.9%). The Structured Questionnaire Phase consisted of 232 participants, representing 9.17% of the total number of students and graduates of the Course. Regarding the benefits of specialization, a significant majority of participants highlighted the “Opportunity for training in medical education/preceptorship” (95.2%) and the “Financial incentive from the Ministry of Health” (91.3%). On the other hand, regarding the difficulties, the “Schedules and deadlines for delivery of activities” (33.1%), and “Difficulties with feedback from tutors and pedagogical support” (21.9%) emerge as important obstacles for the activities of the course. **Conclusions:** The Specialization Course in Preceptorship proved to be an ambitious and remarkable initiative, reaching thousands of resident physicians in the specialty in different parts of the country. Although some of its strategies and tools need to be improved, the general perception of students and graduates was positive.

**Keywords:** Family practice; Distance education; Preceptorship; Internship and residency; Medical education.

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### Corresponding author:

Iago Gonçalves Ferreira  
E-mail: [iago\\_goncalves14@hotmail.com](mailto:iago_goncalves14@hotmail.com)

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## Resumo

**Introdução:** Os programas de formação pedagógica representam importantes estratégias de qualificação de médicos que atuam ou desejam atuar como preceptores e/ou docentes. Nesse sentido, emerge o Curso de Especialização em Preceptoría em Medicina de Família e Comunidade da Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre (UNA-SUS/UFCSPA), com o intuito de promover a formação de preceptores para a especialidade, ainda durante a residência médica. **Objetivo:** Analisar o perfil demográfico dos participantes do Curso de Especialização em Preceptoría, assim como seu desempenho, percepções, benefícios e dificuldades durante as atividades do curso. **Métodos:** Estudo descritivo, observacional e quantitativo, conduzido em duas etapas: Mapeamento Populacional (Etapa 1), realizada por meio do levantamento de dados cadastrais na Secretaria Acadêmica da UNA-SUS/UFCSPA; e Questionário Estruturado (Etapa 2), executada com a aplicação de questionário em plataforma digital. A pesquisa incluiu variáveis como turma do curso, status acadêmico, gênero, idade, estado e cidade de origem dos participantes, além das percepções, benefícios e dificuldades durante a realização do curso. As percepções acerca deste foram analisadas por meio de versão adaptada da ferramenta *Constructivist On-Line Learning Environment Survey* (Colles). **Resultados:** Na etapa Mapeamento Populacional, foram identificados 2.530 alunos e egressos nas três edições do Curso de Especialização em Preceptoría, com predomínio de participantes do gênero feminino (65,4%) e da Região Sudeste (48,9%). A etapa “questionário estruturado” foi constituída por 232 participantes, representando 9,17% do total de alunos e egressos do curso. Acerca aos benefícios da especialização, a maioria expressiva dos participantes destacou a “oportunidade de capacitação em educação médica/preceptoría” (95,2%) e o “incentivo financeiro do Ministério da Saúde” (91,3%). Por outro lado, a respeito das dificuldades, os “cronogramas e prazos de entrega de atividades” (33,1%) e “dificuldades com o feedback dos tutores e suporte pedagógico” (21,9%) despontam como importantes empecilhos para as atividades do curso. **Conclusões:** O Curso de Especialização em Preceptoría mostrou-se uma iniciativa ambiciosa e notável, alcançando milhares de médicos residentes da especialidade em distintos locais do país. Embora algumas de suas estratégias e ferramentas necessitem ser aprimoradas, a percepção geral dos alunos e egressos manifestou-se positiva.

**Palavras-chave:** Medicina de família e comunidade; Educação a distância; Preceptoría; Internato e residência; Educação médica.

## Resumen

**Introducción:** Los programas de formación pedagógica representan importantes estrategias de calificación para los médicos que se desempeñan o desean desempeñarse como preceptores y/o docentes. En ese sentido, surge el Curso de Especialización en Preceptoría en Medicina Familiar y Comunitaria de la *Universidad Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre* (UNA-SUS/UFCSPA), con el objetivo de promover la formación de preceptores para la especialidad, incluso durante la residencia médica. **Objetivo:** Analizar el perfil demográfico de los participantes del Curso de Especialización en Preceptoría, así como su desempeño, percepciones, beneficios y dificultades durante las actividades del curso. **Métodos:** Estudio descriptivo, observacional y cuantitativo, realizado en 2 etapas: Mapeo Poblacional (Etapa 1), realizado a partir de levantamiento de datos de matrícula en el Departamento Académico de la UNA-SUS/UFCSPA; y Cuestionario Estructurado (Etapa 2), realizado mediante la aplicación de un cuestionario en una plataforma digital. La investigación incluyó variables como clase del curso, estatus académico, género, edad, estado y ciudad de origen de los participantes, además de percepciones, beneficios y dificultades durante el curso. Las percepciones sobre el curso se analizaron utilizando una versión adaptada de la herramienta *Constructivist On-Line Learning Environment Survey* (Colles). **Resultados:** En la etapa de Mapeo Poblacional, fueron identificados 2.530 estudiantes y egresados en las tres ediciones del Curso de Especialización en Preceptoría, con predominio de participantes del género femenino (65,4%) y de la región Sudeste (48,9%). La etapa de “Cuestionario Estructurado” constó de 232 participantes, representando el 9,17% del total de alumnos y egresados del Curso. En cuanto a los beneficios de la especialización, una gran mayoría de los participantes destacó la “Oportunidad de formación en educación médica/preceptoría” (95,2%) y el “Incentivo económico del Ministerio de Salud” (91,3%). Por otro lado, en cuanto a las dificultades, los “horarios y plazos de entrega de las actividades” (33,1%) y las “dificultades con el *feedback* de los tutores y el apoyo pedagógico” (21,9%) se destacan como obstáculos importantes para las actividades del curso. **Conclusiones:** El Curso de Especialización en Preceptoría demostró ser una iniciativa ambiciosa y destacable, llegando a miles de médicos residentes de la especialidad en diferentes puntos del país. Si bien es necesario mejorar algunas de sus estrategias y herramientas, la percepción general de los estudiantes y egresados fue positiva.

**Palabras clave:** Medicina familiar y comunitaria; Educación a distancia; Preceptoría; Internado y residencia; Educación médica.

## INTRODUCTION

The formation of medical practice involves a progressive learning process, in which students develop skills and abilities based on experiences in real scenarios, thus building their autonomy and professional identity.<sup>1-3</sup> In recent decades, medical curricula have sought to early include students in practices, bringing theoretical knowledge and professional practice closer together from the first years of college.<sup>1-4</sup>

Learning medical practice requires adequate guidance and supervision, highlighting the figure of the preceptor, an experienced professional responsible for monitoring the activities of students and/or residents in care settings, who plays the role of mediator, mentor or even reference for future professionals.<sup>1-3</sup>

From this perspective, preceptorship is a fundamental element of the professional training process, providing the environment of medical students and medical residents in practice scenarios and in real situations of professional life. In view of these attributions, for physicians to be able to adequately perform the functions of educators, it is essential that they demonstrate mastery not only of content and technical skills, but that they are able to offer qualified learning experiences to students.<sup>2</sup>

However, traditionally, medical schools have adopted academic-professional prominence as the main criterion of their faculty, prioritizing academic productivity and involvement in care services.<sup>5-7</sup> Therefore, many professionals enter the university environment without adequate preparation and the didactic-pedagogical competences for teaching and preceptorship attributions.<sup>6,7</sup>

In view of this, pedagogical training programs have represented important resources for qualifying medical education, providing introductory knowledge and teaching tools to professionals who work or wish to work as preceptors and/or professors.<sup>8</sup>

Given this situation, in recent years, the training of preceptors has been the focus of several studies and publications in the field of medical education, especially in Family Medicine (FM), in which different experiences of courses, workshops, and training programs in preceptorship have been reported in the literature.<sup>9-12</sup>

Within the scope of Primary Health Care (PHC), individuals and their health-disease processes are immersed in complex psychosocial and cultural frameworks, demanding specific skills and interdisciplinary knowledge from health professionals. From this perspective, acting in PHC represents a notable challenge, which proves to be even more prominent from the perspective of the preceptors, who are responsible for contributing and accompanying the development process of the new generations of doctors in this context.<sup>9</sup>

In 2013, Law 12.871 ("More Doctors Law") established important changes in medical education guidelines, reinforcing the role of strategic areas such as PHC for the Unified Health System (*Sistema Único de Saúde – SUS*). Among the recommended proposals, it is worth mentioning the expansion of the curricular load destined to PHC in undergraduate Medicine and the expansion of residency vacancies in FM, thus causing an increase in the demand for preceptors in these care scenarios.<sup>13-15</sup>

Historically, one of the main obstacles to the expansion of FM in Brazil has been the limited supply of qualified preceptors, which has a huge impact on the opening of residency vacancies in the specialty. In light of this scenario, throughout the years 2000 and 2010, both the Brazilian Society of Family and Community Medicine (*Sociedade Brasileira de Medicina de Família e Comunidade – SBMFC*) and the Ministry of Health undertook various initiatives to qualify preceptors,<sup>4,10</sup> such as the Preceptor Training Workshops by SBMFC in 2006;<sup>4,10</sup> the Leonardo EURACT project, started in 2011;<sup>16</sup> and the training courses in preceptorship of the SUS Institutional Development Support Program (*Programa de Apoio ao Desenvolvimento Institucional do SUS – PROADI-SUS*).<sup>17,18</sup>

Among the main projects, the National Program for Training Preceptors and the Specialization Course in Preceptorship in Family and Community Medicine stand out, with the aim of promoting the training of preceptors for the specialty, even during medical residency, in a way to accelerate the expansion of vacancies in FM programs.<sup>9,14,15,19,20</sup>

## The Specialization Course in Preceptorship in Family and Community Medicine at *Universidade Aberta do Sistema Único de Saúde*

The Specialization Course in Preceptorship is part of the National Preceptor Training Program, an initiative launched by the Ministry of Health in 2016 with the aim of expanding the training of preceptors in FM,<sup>9,15,21</sup> in order to contribute to the teaching-learning process in PHC both in medical graduation and residency in FM.<sup>19,20</sup>

Since its launch in 2016, the Specialization Course has offered vacancies to FM residents in three editions: Class 1 (2016–2018), Class 2 (2018–2020), and Class 3 (2019–2021). The postgraduate course was developed through distance education, with a workload of 550 hours and a duration of two years, organized into nine teaching units, focusing on two thematic axes: clinical management in PHC and medical education and preceptorship.<sup>9,14,15,19,20</sup> The teaching units consisted of a theoretical module, three to four complex clinical cases, a discussion forum, and an integrative activity. Aiming to make learning more contextualized, the course presents fictional cities with maps, sociodemographic information, health indicators, and details of the structure of health services.<sup>19,20</sup>

Students were distributed into “virtual groups” with approximately 35 to 40 participants and were accompanied by tutors throughout the course, who were responsible for mediating discussions between students in the forums and for supervising educational and evaluative activities. The evaluations took place in the distance and face-to-face modalities. In addition to passing the units to obtain the title of Specialist in Preceptorship in FM, students had to present a Final Term Paper (*Trabalho de Conclusão de Curso – TCC*), which consisted of a final portfolio and an intervention project.<sup>19,20</sup>

Given the strategic importance of training preceptors in FCM, this study aimed to analyze the demographic profile of students and graduates of the Specialization Course in Preceptorship in FM, as well as their performance, perceptions, benefits, and difficulties in getting involved with the activities of this initiative.

## METHODS

### Design and data collection

Descriptive, observational, and quantitative study, which aimed to analyze the demographic profile and performance of students and graduates of the Specialization Course in Preceptorship in FM, as well as their perceptions about this educational project.

The research was approved by the Research Ethics Committee of *Universidade Federal de Ciências da Saúde de Porto Alegre* — UFCSPA (Ethical Approval — CAAE: 31351920.2.0000.5345/Opinion: 4.164.125) and the Academic Office of *Universidade Aberta do SUS/ Universidade Federal de Ciências da Saúde de Porto Alegre* (UNA-SUS/UFCSPA), being organized in two phases: Population Mapping (Phase 1) and Structured Questionnaire (Phase 2), which were conducted in October/2020 to April/2021.

In Phase 1 – Population Mapping, the casuistry consisted of the registration data of enrolled students and graduates of the three editions of the Specialization Course, UNA-SUS/UFCSPA. Based on data collection, sociodemographic variables such as course class, academic status, gender, age, state, and city of origin were analyzed.

With regard to academic status, according to the Specialization Course guidelines, students who obtained an average equal to or greater than 7.0 in each unit and in the TCC, or an average equal to or greater than 6.0 in the final exam were considered approved. Those who disapproved were the ones who obtained a final average of less than 4.0 in distance learning activities, an average of less than 6.0 in the final exam and/or an average of less than 7.0 in the TCC.

Phase 2 — Structured Questionnaire, included enrolled students with academic status “attending” and graduates with status “approved” in the Specialization Course. Students with status “disconnected” and “reproved” were not included in this phase, for not having completed the curricular activities of the course, making it impossible to form a complete and reliable conception of the specialization. However, as some of the failures occurred after completing the course activities, given the non-compliance with the required performance criteria, the distinction of participants according to the moment of failure would not be feasible and accurate, thus that subgroup was excluded.

In this sense, considering the eligible population (1,562 participants with status “attending” or “approved”), as well as a 95% confidence level and a 4% margin of error, the desirable sample of participants for recruitment would consist of 309 students or egress.

Regarding the research instrument, a questionnaire prepared by the researchers was adopted, consisting of sociodemographic variables such as gender, city, state and age, as well as questions about perceptions, benefits and difficulties of the participants throughout the specialization course. Thus, in view of previous studies on the use of virtual teaching-learning environments,<sup>22-24</sup> an adapted version of the Constructivist On-Line Learning Environment Survey (Colles) was chosen as a research tool, an instrument designed by Taylor and Maor<sup>25</sup> for the evaluation of teaching-learning virtual platforms.

Based on theories of social constructivism, the Colles Questionnaire proposes that students reflect on their knowledge construction process, in order to recognize their role as reflective and collaborative learners.<sup>22-25</sup> The questionnaire is composed of 24 questions, organized into six thematic dimensions, in which alternatives stratified into five frequency variables are presented: “almost never”, “rarely”, “sometimes”, “often” and “almost always”. In view of the objectives proposed by the study, an adapted version of the Colles Questionnaire was adopted, consisting of three thematic axes: course, learning, and tutors.

The application of the questionnaire took place through the Google Forms® virtual environment, with the recruitment of participants through emails sent by the Academic Office of UNA-SUS/ UFCSPA, as well as invitations published on social networks and e-mails from medical entities contacted by researchers.

## Data analysis

Data analysis adopted Pearson's  $\chi^2$  test for categorical variables and the Kruskal-Wallis test for discrete quantitative variables with asymmetric distribution, using the Kolmogorov-Smirnov normality test. Quantitative variables that showed statistical significance in the Kruskal-Wallis test were submitted to Scheffé's *post hoc* test.

Data from the adapted Colles Questionnaire were analyzed from two perspectives: qualitative, in which the frequencies of respondents in the five stratified variables of the questionnaire were considered;

and quantitative, in which the five stratified variables were organized on a numerical scale (1 to 5), enabling statistical analysis based on measures of central tendency and dispersion.

Researchers adopted as a significance parameter  $p$  less than or equal to 5% with a confidence interval of 95% and the Statistical Package for Social Sciences software (IBM SPSS® 23) for the statistical analysis of variables.

## RESULTS

In the Population Mapping Phase, 2,530 records of students and graduates of the Specialization Course in Preceptorship in FM were identified. Among the three editions of the Course, Class 1 had the highest number of participants (38.5%), followed by Class 2 (33.5%), and Class 3 (28%).

With regard to regional distribution, the majority of specialization students were found in the Southeast Region (48.9%), with emphasis on the states of Rio de Janeiro (21.4%) and São Paulo (13.6%), while the Central-West showed the lowest participation (Table 1 and Figure 1).

**Table 1.** Demographic profile of the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre*. Population Mapping (Phase 1).

	Demographic profile								Coefficient	p
	C1		C2		C3		Overall			
Age										
Mean	33.47		34.25		31.63		33.21			
SD	5.56		5.92		4.78		5.58			
SE	0.18		0.20		0.18		0.11		145.31*	<0.001*
Minimum	26.0		26.0		26.0		26.0			
Maximum	77.0		70.0		63.0		77.0			
	n	%	n	%	n	%	n	%		
Gender										
Male	328	33.7	290	34.2	257	36.2	875	34.6	1.27*	0.530*
Female	646	66.3	557	65.8	452	63.7	1,655	65.4		
Region										
North	107	11.0	58	6.8	60	8.5	225	8.9		
Northeast	149	15.3	180	21.2	138	19.5	467	18.4		
Center-West	70	7.2	66	7.8	62	8.7	198	7.8	25.52*	<0.001*
Southeast	482	49.5	428	50.5	327	46.1	1,237	48.9		
South	166	17.0	115	13.5	122	17.2	403	15.9		
Academic status										
Approved	595	61.0	424	50.0	0	0	1,019	40.2		
Enrolled	0	0	0	0	543	76.6	543	21.5	1,904.08*	<0.001*
Unenrolled	46	4.7	19	2.2	30	4.23	95	3.8		
Reproved	333	34.2	404	47.7	136	19.2	873	34.5		
Total	974	38.5	847	33.5	709	28.0	2,530	100.0		

\*Kruskal-Wallis test. Scheffé's *post hoc* test showed a significant difference in mean age between groups, revealing a higher mean in Class 1 compared to Class 3 ( $p=0.10$ ; confidence interval — 95%CI=1.177–2.503) and a higher mean in Class 2 in relation to Class 1 ( $p=0.010$ ; 95%CI=0.155–1.417); †Pearson's chi-square test. C1: Class 1; C2: Class 2; C3: Class 3; SD: standard deviation; SE: standard error.



Source: Prepared by the authors, based on the UNA-SUS/UFCSPA database, adopting the Google® My Maps platform (2021). **Figure 1.** Map of the cities of origin of the participants of the Specialization Course in Preceptorship in Family Medicine (UNA-SUS/UFCSPA). Population Mapping.

Regarding the population profile, there was a predominance of females (1.9:1), with no significant difference between the classes of the course, as well as an average age of 33.1 years, with Class 2 showing the highest average among the three editions (Table 1). Considering the age differences between the subpopulations, we opted for a comparative analysis between the three classes of the course.

As for the graduates of the course, there were clear differences in performance, with Class 1 obtaining a higher percentage of approval than Class 2, with 61.1 and 50.0%, respectively (Table 2). As for the regions of Brazil, the South Region had the highest approval rate (74.7%) and the North Region the lowest rate (43%) (Table 2).

**Table 2.** Profile of graduates of the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre*. Population Mapping (Phase 1)\*.

	Approved		Unenrolled		Reproved		Total		$\chi^2$	p
	n	%	n	%	n	%	n	%		
Region										
North	71	43.0	10	6.1	84	50.9	165	100	65.40**	<0.001**
Northeast	183	55.6	11	3.3	135	41.0	329	100		
Center-West	66	48.5	4	2.9	66	48.5	136	100		
Southeast	489	53.7	27	3.0	394	43.3	910	100		
South	210	74.7	13	4.6	58	20.6	281	100		
Classes										
C1	595	61.1	46	4.7	333	34.2	974	100	38.08**	<0.001**
C2	424	50.0	19	2.2	404	47.7	847	100		
Gender										
Male	319	51.6	23	3.7	276	44.7	618	100	7.26**	0.26**
Female	700	58.2	42	3.5	461	38.3	1,203	100		
Institution										
Federal	221	58.8	13	3.5	142	37.8	376	100	10.49**	0.105**
State	242	57.3	15	3.6	165	39.1	422	100		
Municipal	382	57.5	23	3.5	259	39.0	664	100		
Private/Philanthropic	174	48.5	14	3.9	171	47.6	359	100		
Total	1,019	56.2	65	3.5	737	40.7	1,811	100		

\*Class 1 (2016/2018) and Class 2 (2018/2020) were included because they had completed the Specialization Course in Preceptorship in Family Medicine; \*\*Pearson's chi-square test.

In the Structured Questionnaire Phase, 232 students and graduates of the Course participated, which constitutes 9.17% of the total number of specialization students (n=2,530). Considering the population eligible for the study (n=1,562), the response rate obtained in Phase 2 was 14.85%. Classes 2 and 3 showed greater adherence of participants — 36.6 and 37.5%, respectively —, as well as the Southeast (44.4%) and South (24.6%) regions. The composition of gender and age was similar to the Population Mapping, with female predominance (66.8%) and mean age of 32.43 (Table 3).

Regarding perceptions about the Specialization Course, in the “course” axis of the Colles Questionnaire, it was found that most participants stated that “often” learning was focused on subjects of interest, with relevant learning and connections to medical practice, and learning favoring the improvement of professional performance (Figure 2 and Table 4).

Regarding the “learning” axis, a considerable portion of students and graduates reported that they “often” reflected on the way they learn, their own ideas and those of the other participants, and the contents made available by the course (Figure 2 and Table 4).

The “tutors” axis revealed the lowest averages in the stratification variables among all the axes of the Colles Questionnaire, revealing a low perception of the participants regarding the contributions of the tutors to the improvement of the quality of academic productions, as well as to the students' critical reflection process (Table 4).

Still on contributions to academic productions, lower averages are noted in Classes 1 and 2 compared to Class 3, with statistically significant differences. However, encouraging interaction among



**Table 3.** Profile of students and graduates of the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre*. Structured Questionnaire (Phase 2).

Profile of participants		
Class	n	%
C1	60	25.9
C2	85	36.6
C3	87	37.5
Age		
Mean		32.43
SD		6.399
Minimum		26
Maximum		77
Gender		
	n	%
Male	77	33.2
Female	155	66.8
Regions		
	n	%
North	16	6.9
Northeast	38	16.4
Center-West	16	6.9
Southeast	106	45.7
South	56	24.1
Total	232	100.0

C1: Class 1; C2: Class 2; C3: Class 3; SD: standard deviation.

students obtained positive impressions from most participants: “often” with 41.6% and “almost always” with 19.5% (Figure 2).

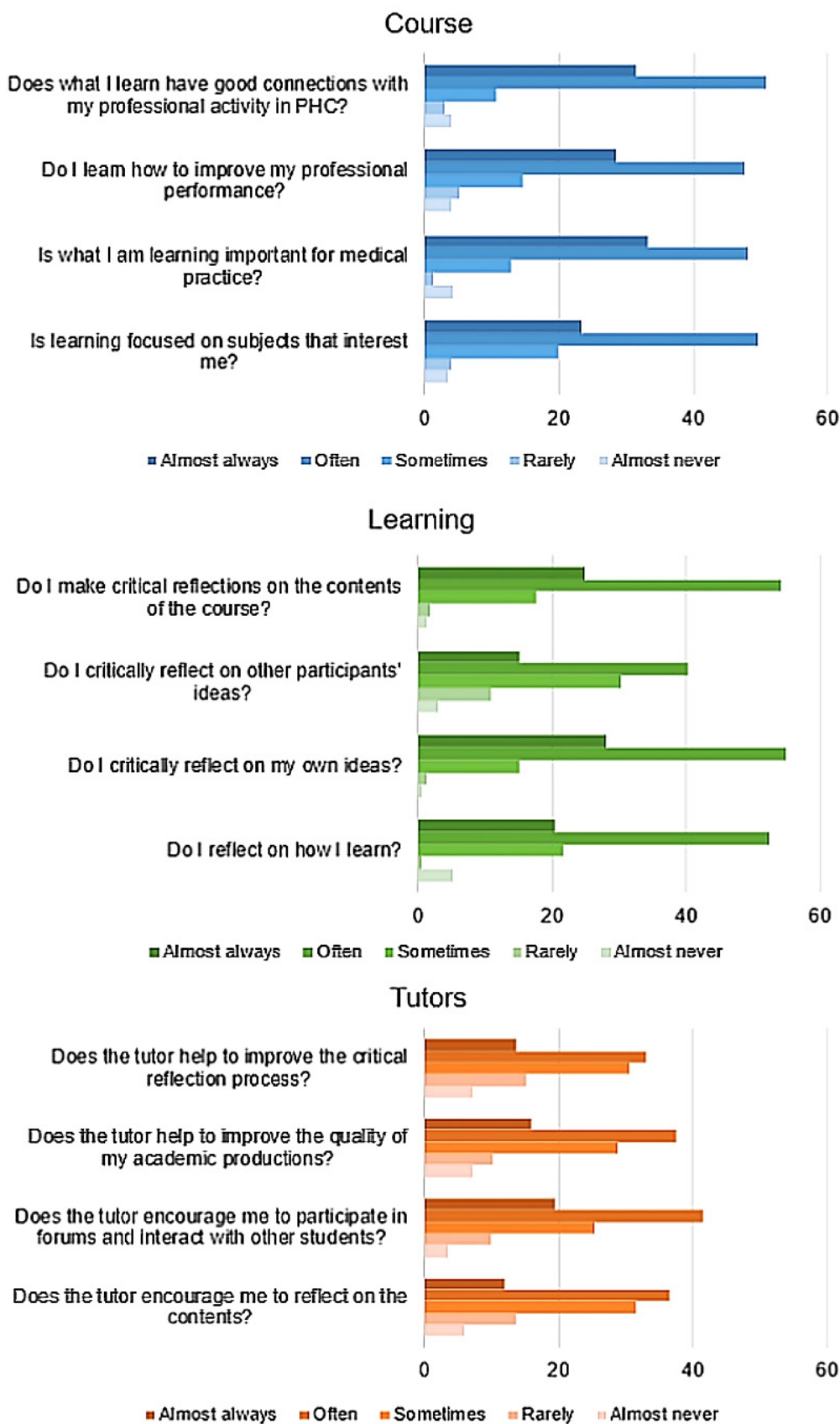
With regard to the benefits arising from the Specialization Course in Preceptorship, the significant majority of participants pointed to the “opportunity for training in medical education/preceptorship” (95.2%) and the ‘financial incentive from the Ministry of Health’ (91.3 %) as the main incentives offered by the initiative (Table 5).

On the other hand, regarding difficulties, “schedules and deadlines for delivering activities” (33.1%) and “difficulties with feedback from tutors and pedagogical support” (21.9%) stand out as important obstacles to activities of the course. There is also a greater perception of difficulty with regard to “schedules and deadlines” on the part of students in Class 3 (71.3%), and with regard to the “lack of face-to-face activities” on the part of Class 1 (48.1 %) (Table 6).

## DISCUSSION

### The Specialization Course in Preceptorship and the Open University of the Unified Health System: training preceptors through distance education

The use of Information and Communication Technologies and Distance Education (*Educação a Distância – EAD*) favors the inclusion of students who wish to improve and complement their studies, but



**Figure 2.** Participants' perceptions of the Specialization Course in Preceptorship in Family Medicine, based on the adapted Colles Questionnaire (Phase 2).

**Table 4.** Perceptions of participants about the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre*, according to the Colles Questionnaire (adapted).

Questions	Course			Overall			H*	p*
	C1	C2	C3	Mean	SD	(95%) CI		
	Is learning focused on subjects that interest me?	3.917	3.812	3.851	3.853	0.9375		
Is what I am learning important for medical practice?	4.102	3.918	4.138	4.048	0.9521	3.924–4.171	5.465	0.065
Do I learn how to improve my professional performance?	3.847	3.812	4.069	3.918	0.9944	3.789–4.047	6.755	0.034**
Does what I learn have good connections with my professional activity in PHC?	4.133	3.965	4.023	4.030	0.9461	3.908–4.153	4.551	0.103
Questions	Learning			Overall			H*	p*
	C1	C2	C3	Mean	SD	(95%) CI		
	Do I reflect on how I learn?	4.033	3.682	3.816	3.823	0.9346		
Do I critically reflect on my own ideas?	4.167	3.953	4.174	4.091	0.7196	3.998–4.184	7.070	0.029**
Do I critically reflect on other participants' ideas?	3.733	3.560	3.384	3.539	0.9783	3.412–3.666	4.373	0.112
Do I make critical reflections on the contents of the course?	4.183	3.882	3.989	4.000	0.7840	3.899–4.101	5.242	0.073
Questions	Tutors			Overall			H*	p*
	C1	C2	C3	Mean	SD	(95%) CI		
	Does the tutor encourage me to reflect on the contents?	3.217	3.247	3.540	3.349	1.0542		
Does the tutor encourage me to participate in forums and interact with other students?	3.633	3.524	3.747	3.636	1.0161	3.505–3.768	2.021	0.364
Does the tutor help to improve the quality of my academic productions?	3.233	3.294	3.736	3.444	1.1035	3.301–3.587	11.178	0.004***
Does the tutor help to improve the critical reflection process?	3.150	3.200	3.529	3.310	1.1120	3.166–3.454	6.690	0.035**

C1: Class 1; C2: Class 2; C3: Class 3; SD: standard deviation; CI: confidence interval; H: Kruskal-Wallis H test; \*Kruskal Wallis test/Kolmogorov-Smirnov normality test; \*\*Scheffé *post hoc* test did not show differences between classes; \*\*\*Scheffé *post hoc* test showed differences between the classes in the question related to the tutor's help in improving the quality of academic productions (3<sup>rd</sup> question in the "tutors" section), with a higher average in Class 3 compared to Class 1 ( $p=0.024$ ; 95%CI=0.054–0.951) and Class 2 ( $p=0.030$ ; 95%CI=0.034–0.849).

who are far from educational institutions to enter face-to-face modalities.<sup>24</sup> Given the potential of EAD, UNA-SUS was created in 2010, having among its objectives the offer of training courses and permanent education to SUS health professionals, in order to reduce inequalities between the different regions of the country.<sup>26</sup>

From this perspective, the Specialization Course in FM Preceptorship (UNA-SUS/UFCSPA) revealed considerable scope and capillarity among FM residency programs. Throughout its three editions, the Specialization Course provided 2,530 doctors residing in FM with an introduction to teaching content, tools and teaching resources, reaching participants in 175 cities, in all regions of the country, through EAD.

From this angle, Population Mapping data demonstrated the Specialization Course in Preceptorship having reached all the regions of the country, with a predominance of residents from the Southeast and

**Table 5.** Perceptions of participants about the benefits of the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre\**.

	Course benefits							
	C1		C2		C3		Overall	
	n	%	n	%	n	%	n	%
Training opportunity in medical education/preceptorship	58	96.7	78	92.9	84	96.6	220	95.2
Training opportunity in clinical practice	28	46.7	45	53.6	55	63.2	128	55.4
Flexibility and accessibility of the distance learning model	47	78.3	61	72.6	71	81.6	179	77.5
Postgraduate education and qualifications	49	81.7	64	76.2	67	77.0	180	77.9
Contents and topics covered	38	63.3	39	46.4	63	72.4	140	60.6
Feedback from tutors and pedagogical support	19	31.7	9	10.7	31	35.6	59	25.5
Financial incentive from the Ministry of Health (scholarship)	57	95.0	78	92.9	76	87.4	211	91.3
Others	2	3.3	1	1.2	3	3.4	6	2.6
Total								100.0

C1: Class 1; C2: Class 2; C3: Class 3. \* Multiple answer question.

**Table 6.** Perceptions of the participants about the difficulties with the Specialization Course in Preceptorship in Family Medicine, *Universidade Aberta do Sistema Único de Saúde/Universidade Federal de Ciências da Saúde de Porto Alegre\**.

	Difficulties with the course							
	C1		C2		C3		Overall	
	n	%	n	%	n	%	n	%
Lack of face-to-face activities (EAD model)	25	48.1	24	31.2	16	20.0	65	17.8
Contents and topics covered by the course	9	17.3	21	27.3	11	13.8	41	11.2
Activity schedules and deadlines	21	40.4	43	55.8	57	71.3	121	33.1
Difficulties with virtual and face-to-face assessments	8	15.4	26	33.8	25	31.3	59	16.1
Difficulties with feedback from tutors and pedagogical support	20	38.5	33	42.9	27	33.8	80	21.9
Total								100.0

C1: Class 1; C2: Class 2; C3: Class 3. \* Multiple answer question.

South regions, supporting the trend verified by Oliveira et al., who identified a higher concentration of medical residency vacancies in FM in these regions, with 13.2 and 11.77 vacancies per 100,000 inhabitants, respectively.<sup>27</sup>

Distance learning represents a valuable teaching modality, which enables the qualification of professionals in large and developing countries, such as Brazil, where the teaching and research complexes are not well distributed in the territory.<sup>28</sup> Thus, it is possible to reach distant locations with less financial resources, at a relatively low cost, in addition to enabling the homogenization and sharing of knowledge.

## Experiences and perceptions about the Specialization Course in Preceptorship: participants' perspective

The evaluation of educational programs consists of a primordial stage of the teaching-learning process, providing data generation and the analysis and interpretation of educational actions, in order to understand the repercussion of the results of its implementation for the target public. Therefore, this resource subsidizes decision-making by educational institutions and/or universities that propose these initiatives.<sup>29</sup>

In this way, the adoption of evaluation tools in distance learning programs proves to be even more relevant, in view of the peculiarities of this educational modality, as well as the need for more rigorous pedagogical monitoring due to the spatial and temporal distances of students.<sup>23</sup>

In this sense, aiming to facilitate the evaluation of teaching programs in virtual environments, the Colles Questionnaire was developed, a tool for evaluating students' perceptions about the teaching-learning process in a distance learning scenario.<sup>23,24</sup>

Regarding this questionnaire, the thematic axis "Course" showed that most participants expressed positive impressions, reporting that they "almost always" or "frequently" perceived the connection between learning and professional activity, the relevance of the contents for medical practice and learning ways to improve professional performance. Such findings converge with the results of a survey carried out with graduates of a permanent education course in Dentistry in Rio Grande do Sul, who, adopting the Colles Questionnaire, showed a predominance of answers "almost always" or "often" in the items referring to the axis "course".<sup>24</sup>

However, higher percentages were noted in Dentistry programs, with frequencies above 50% in "almost always", while in the Specialization Course in Preceptorship in FM at UNA-SUS, values close to 50% were related to the answer "often". A possible explanation for these observations may be the greater relationship between the contents of courses in Dentistry and the technical framework of the profession, contrasting with the medical teaching topics of the present research.

As for the topic "reflections on the ideas of other participants", higher frequencies were observed among negative perceptions, suggesting a sparse degree of interaction among students in the course. In virtual learning environments, communication between participants can be synchronous (via chats and meetings in virtual rooms) or asynchronous (via forums).

In this sense, forums were adopted as an interaction tool, in order to facilitate the sharing of experiences and knowledge among the specialization students. However, such a resource has its effectiveness directly linked to the students' level of engagement in expressing their opinions and experiences, and students must be accompanied and encouraged by tutors through questioning and provocation.<sup>30</sup>

In view of this, the findings by Wander et al.<sup>30</sup> about interactions in virtual forums of the first edition of the Specialization Course in Preceptorship in FM provide relevant contributions to this investigation. Through analysis of a mixed nature, the authors note that more than half of the messages posted on the forums were intended for the obligatory fulfillment of course tasks, with no relation to each other.<sup>30</sup>

With regard to the interactivity of the participants, Wander et al.<sup>30</sup> underline the central role of the student-tutor interaction in triggering discussions in the forums, so that groups with more active participation of tutors revealed a greater amount of messages and enunciative chains. Thus, the importance of the tutors' engagement in conducting these discussions is highlighted, introducing new topics and perspectives throughout the debates.<sup>30</sup>

Still with regard to tutors, through the adapted Colles Questionnaire, it was noticed that a considerable portion of students and graduates expressed unfavorable perceptions regarding the contributions of tutors, with relatively higher frequencies of evaluations "sometimes" and "rarely" in this axis in comparison with the too much. These results contrast with research carried out in the Specialization Course in Health for the Aged at UNA-SUS/ *Universidade do Estado do Rio de Janeiro* (UERJ), which showed better views about the performance of tutors — "good" (43%) and "great" (48%).<sup>31</sup>

It is worth noting that the contribution of tutoring in academic productions was better conceptualized in Class 3, which may be associated with greater contact between students and tutors at the time of

application of the questionnaires, since they were in the process of concluding the TCC and finalizing the course. In addition, the Specialization Course in Preceptorship underwent pedagogical reformulations in its 3<sup>rd</sup> edition, which changed themes and classes taught as well as the body of tutors, which may have influenced the perceptions of these participants.

## **The Specialization Course in Preceptorship: evaluation, performance, and educational contributions**

With regard to the performance of graduates of the Specialization Course, modest rates of success are observed, with a pass rate of 56.2%. This percentage differs from the findings of a master's thesis on the Specialization Course in Family Health (UNA-SUS/UFCSPA), which verified 64% of approved graduates,<sup>32</sup> as well as an experience report about the Specialization Course in Family Health (UNIFESP/UNA-SUS), which observed an approval rate of 69.9%.<sup>33</sup>

However, consonant achievement rates were reported in a survey on UNA-SUS specialization courses, in which it was observed that, of the 41,100 students and graduates registered at UNA-SUS in 2017, 20,437 (49.7%) were approved graduates; 8,201 (19.9%) students enrolled; 7,880 (19.1%) reprovado, unenrolled or inactivated; and 4,573 (11.1%) were awaiting enrollment.<sup>34</sup> Considering only permanent students, 46.3% passed, 30.86% disapproved or were dismissed, and 22.7% were actively enrolled.<sup>34</sup>

The availability of time for course activities and reconciliation with medical residency responsibilities constituted unfavorable conditions for educational performance in the view of respondents, whose main difficulty was meeting deadlines and schedules. Time management is also among the main difficulties of students in the UNA-SUS/UERJ specialization course, who mentioned problems with tasks and deadlines.<sup>31</sup>

As for the performances in the different regions and classes, a more fruitful use can be seen in the South Region, whose approval rate was close to 75%, contrasting with 43% in the North Region. Such findings need to be further investigated in complementary studies, paying attention to factors that could be related to these discrepancies, such as the structure of PHC networks, organization of residency programs, medical training of residents and specialists, among other aspects.

Regarding the contributions of the initiative, a notable portion of the participants considered the Specialization in Preceptorship as an important training opportunity in medical education, which makes it possible to obtain a postgraduate degree, valuing the relevance of the contents addressed and the clinical updating provided.

In line with this trend, positive evaluations were also observed in previous studies about educational initiatives by UNA-SUS,<sup>35,36</sup> such as Specializations in Family Health by UNA-SUS/Unifesp<sup>35</sup> and UNA-SUS/UFCSPA,<sup>37</sup> which identified improvement in the processes of care, teamwork, and organization by the participating professionals. It is also the case of the Specialization in Family Health of the *Mais Médicos* Program (UNA-SUS/Universidade Federal de Pelotas – UFPel), in which an improvement in clinical practices and expansion of knowledge of the organization of the SUS was observed.<sup>36</sup>

## **Study limitations**

Regarding the limitations of this study, the low response rate obtained in Phase 2 (Structured Questionnaire) is highlighted, arising from the difficulties in disseminating the research as well as the

atypical scenario of the COVID-19 pandemic, which may have contributed to the demobilization of the professionals. In view of this, the low adherence of participants to Phase 2 may contribute to the reduction of the ability to generalize the results, although the population characteristics of the casuistry (Phase 2) are convergent with the profile of the population studied (Phase 1).

In addition, the exclusion of “disapproved” or “disconnected” participants may have had an impact on the observed results and trends, given that such graduates could report possible weaknesses, criticisms and difficulties regarding the course, to the extent that the final status unfavorable could be associated with adversities during specialization. However, given the complexity and imprecision in defining when these statuses were established, it was decided not to include these subgroups in Phase 2.

## CONCLUSION

The Specialization Course in Preceptorship in FM proved to be an ambitious and remarkable initiative, reaching thousands of medical residents in the specialty in different parts of the country, promoting knowledge, reflections, and sharing of ideas that contributed to the technical and pedagogical training of these new generations of experts.

Although some of the strategies and didactic tools implemented by the Specialization Course in Preceptorship need to be improved, especially regarding interactive resources and the participation of tutors, the general perception of students and graduates was positive, highlighting the contributions and benefits of this initiative.

As for the deepening and follow-up of studies on this subject, further analyses are suggested that cover the other dimensions of training in preceptorship and distance learning, including social, psychological, and educational variables, as well as other actors involved in these training programs, such as tutors, content teachers, and administrators. In this way, it will be possible to understand more fully the potentials, obstacles, and solutions for optimizing these educational strategies.

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## CONFLICT OF INTERESTS

Nothing to declare.

## AUTHORS' CONTRIBUTIONS

IGF: Project administration; Formal analysis; Conceptualization; Data curation; Writing – original draft; Writing – review & editing; Investigation; Methodology; Validation; Visualization. SCC: Formal analysis; Conceptualization; Data curation; Writing – review & editing; Supervisão; Validation; Visualization. MRC: Formal analysis; Conceptualization; Data curation; Writing – review & editing; Methodology; Supervision; Validation; Visualization.

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