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Evaluation of specialized training in hospital pharmacy

Evaluación de la formación especializada en farmacia hospitalaria

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Abstract

Objective: To analyze the degree of satisfaction of hospital pharmacy residents and identify areas of improvement in their training.

Method: A survey (5-point Likert scale) was administered among fourth-year hospital pharmacy residents due to complete their residency in 2018. Bivariate and multivariate logistic regression analyses were performed to identify the association of each independent variable with overall satisfaction.

Results: 67.4% (91/135) of residents filled out the questionnaire. The mean overall satisfaction rate was acceptable-good (3.52 ± 0.92); 86.8% of residents had received an individualized training program, with 50% of them considering their individualized training program to be very well attuned to their day-to-day professional practice. The work of the tutor and other staff members involved in resident education was rated as positive by 63.7% and 72.5% of residents, respectively. A total of 15.4% of residents said that their units had a supervision and progressive empowerment protocol in place. With respect to the level of on-call responsibility bestowed on them, 81% of residents considered it to be adequate; 69.2% considered the supervision they received to be adequate. As many as 96.7% of

Resumen

Objetivo: Analizar el grado de satisfacción de los residentes de la especialidad de farmacia hospitalaria e identificar áreas de mejora en su formación.

Método: Cuestionario *on line* con 51 preguntas dirigido a residentes de cuarto año en Farmacia Hospitalaria que finalizaban su formación en 2018. Se realizó un análisis bivariante y multivariante para identificar la asociación de cada una de las variables independientes con respecto a la satisfacción global y delimitar en qué medida las asociaciones pudieran explicarse por el efecto del resto de variables recogidas en el estudio.

Resultados: Un total de 91 (67,4%) residentes cumplimentaron el cuestionario. La media de satisfacción global fue aceptable-buena ($3,52 \pm 0,92$). El 86,8% disponía de un Plan Individualizado de Formación y el 50% valoraron su adaptación al programa de la especialidad como buena o muy buena. El 63,7% valoró positivamente la labor del tutor principal y un 72,5% la del resto de adjuntos. El 15,4% contestó que su servicio disponía de un protocolo de supervisión y responsabilidad progresiva. El 81% consideró adecuado el nivel de responsabilidad en

KEYWORDS

Satisfaction; Pharmacy Residency; Hospital Pharmacy; Training.

PALABRAS CLAVE

Satisfacción; Residentes; Farmacia hospitalaria; Formación.



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residents dedicated less than 10 hours per week to teaching or research activities; 35.2% of residents had produced five or less articles or congress presentations as first authors. Residents that had defended or were in the process of writing their PhD dissertation were 30.8%; 45.1% were involved in an Research project. Finally, 89% of residents rated the training received as positive, with 75.8% of them stating that they would select the same hospital again. In the statistical analysis, an association was found between overall satisfaction and several variables, with the work done by the main tutor being independently related to overall satisfaction.

Conclusions: Overall satisfaction with the training received by fourth-year residents was acceptable. The work of the tutor and other staff members involved in resident education were the variables with the greatest influence on overall satisfaction, albeit only the tutor's work achieved statistical significance. The supervision of residents' progress, the coaching provided by other staff members during clinical rotations, and research were identified as areas for improvement.

Introduction

The evaluation of the training of health science specialists in accredited training units and centers is regulated by Royal Decree 183/2008¹. The development and implementation of the royal decree leads to a Teaching Quality Management Plan, conceived to ensure that training programs meet the requirements set out by the Hospital Pharmacy Specialty Committee².

The Tutors Working Group of the Spanish Society of Hospital Pharmacists (SEFH), made up of both tutors and residents, was created in 2016 with the aim of assisting instructors in discharging their functions more efficiently. The Group's goals include encouraging the formulation of proposals and development of projects that could improve the quality of training of specialist pharmacists in the future.

Satisfaction surveys of residents provide information regarding residents' opinion about the quality of the training they receive^{3,5}. These surveys are useful in that they help detect potential shortcomings in training programs, identify areas of improvement and establish corrective measures. Such surveys are normally organized at a local level (by teaching units or accredited centers), at a regional level, or at a national level by the Ministry of Health, Consumer Affairs and Social Welfare⁶.

In 2002, a survey was supplied among both specialist hospital pharmacists and residents to gain an in-depth understanding of their perception about the training imparted in pharmacy departments and the possibility to successfully implement the contents of the fourth-year residency program. According to the survey, factors influencing the quality of training included the availability of material and human resources, the motivation of tutors and staff pharmacists, and the importance given to the training programs by the department⁷.

The purpose of the present article is to analyze the satisfaction of fourth-year hospital pharmacy residents with the training they receive and identify potential areas of improvement.

Methods

SEFH's Tutors Working Group designed a survey intended for fourth-year hospital pharmacy residents due to complete their training in 2018. The Working Group thought that the residents about to complete their training were the ones that had a clearer grasp of the training program. An online questionnaire was designed based on Google Docs®, which comprised 51 questions divided up into several sections: general information, educational structure, tutoring, rotations, on-call shifts, training and research (Appendix 1). There were some questions which participants rated their responses on a five point Likert scale: "very good", "good", "acceptable", "insufficient", and "very insufficient" (1 was the lowest grade and 5 was the highest). There was also a group of closed (yes/no) questions and a group of multiple-choice questions. The final question gave respondents the possibility to include additional comments or suggestions about the training received. The questionnaire, which was anonymous, was distributed

las guardias y el 69,2% su supervisión. El 96,7% disponía de menos de 10 horas semanales para actividades docentes o de investigación. Un 35,2% tenía cinco o menos publicaciones o comunicaciones a congresos como primer autor y un 45,1% participaba en algún proyecto de investigación. Un 89% valoró positivamente la formación recibida en su centro y un 75,8% de los residentes volvería a elegir el mismo hospital. El análisis estadístico mostró una asociación respecto a la satisfacción global con significación estadística de varias variables, siendo la labor del tutor principal la que se relacionó de forma independiente con la satisfacción global.

Conclusiones: La satisfacción global con la formación recibida es aceptable, siendo la tutorización del tutor principal y la del resto de farmacéuticos de los servicios de farmacia los factores que afectan a la satisfacción global, si bien sólo la del tutor de un modo estadísticamente significativo. Como áreas de mejora se han detectado la supervisión de la formación, la labor del colaborador docente farmacéutico en las rotaciones clínicas y la investigación.

throughout Spain during the months of February and March 2018 using SEFH's mailing list.

On reception, all questionnaires were reviewed and checked for completeness. A descriptive analysis was carried out of the demographic variables included in the study. The STATA (v12) software was used to conduct the statistical analysis. Central tendency and dispersion measures were calculated for numerical variables, while absolute and relative frequencies were calculated for qualitative variables. Bivariate and multivariate analyses were conducted to identify the association between each independent variable and overall satisfaction by calculating their corresponding crude odds ratios (ORc). A multivariate logistic regression analysis was performed to calculate the adjusted odds ratios (Ora) and determine the extent to which associations could be explained by the effect of the other variables included in the study. A 95% confidence interval (CI) was obtained for both the crude and the adjusted odd ratios.

Results

Ninety-one of the 135 fourth-year residents concluding their training in 2018 filled out the questionnaire (67.4% of the sample). After reviewing the questionnaires, a decision was made to include all of them in the study.

The demographic characteristics of the surveyed population are presented in table 1. All respondents were SEFH members; 70% were female and 91% were aged from 26 to 30 years. Of the 91 questionnaires

Table 1. Demographic characteristics of the surveyed population

Variables	n (%)
Sex	
Male	27 (29.7)
Female	64 (70.3)
Age (years)	
26-30	83 (91.2)
31-35	7 (7.7)
> 35	1 (1.1)
SEFH member?	
Yes	91 (100.0)
No	-
Nr. of residents in the unit	
4 or less	34 (37.4)
5-6	8 (8.8)
7-8	43 (47.3)
> 8	6 (6.6)

SEFH: Spanish Society of Hospital Pharmacists.

returned, 49 corresponded to fourth-year residents from hospitals with ≥ 7 residents in total, and 42 corresponded to residents from hospitals with < 7 residents.

Table 2 shows respondents' satisfaction, both overall and with the different specific aspects of their residency. Mean overall satisfaction was acceptable-good (3.52 ± 0.92).

A total of 76.9% of residents rated the welcome they received on arrival to the Pharmacy Department on their first year as good-very good. Eighty-nine percent had a good understanding about resident training was organized at their hospital. Satisfaction regarding the usefulness of the hospital's intranet/educational website was acceptable (3.00 ± 1.02). Access to resources was rated as good (4.04 ± 0.89). As many as 86.8% of respondents had an individualized training plan and 50% believed that their training plan was well or very well attuned to the characteristics of the specialty. A total of 83.5% of residents had been assigned a training program and 79.1% had been included in a rotations schedule; 41.8% had received information on on-call shifts, 27.5% on research activities and 73.6% on training activities.

Seventy-two percent of surveyed residents were satisfied with the usefulness of the hospital's intranet and/or educational website and 92% were satisfied with the access they were granted to such resources as libraries, journals, books and databases.

When asked about the tutoring received, 63.7% rated the work of their main tutor positively and 72.5% gave positive marks to the tutoring work of other staff members. A total of 42.8% of respondents had at least three annual meetings with their tutor. Nearly 30% (29.7%) were not informed about the criteria used to evaluate their performance and 35.2% were not given information about the grades obtained every year. Residents who did receive this information obtained it from multiple sources: 38.5% from their

tutor, 18.7% from the teaching committee, 4.4% from the head of studies, and 3.3% from some other staff member.

Most respondents stated that they recorded the different clinical, educational and research activities in their resident's logbook or in an annual report.

As far as rotations were concerned, 61.5% of respondents considered that the degree of fulfilment of their rotations schedule was good or very good, and 75.8% stated that the supervision they received from staff members was acceptable. When asked whether their department had a supervision and progressive empowerment protocol, 15.4% answered in the affirmative, 19.8% knew it existed but nobody had explained it to them, 23.1% answered negatively, and 41.8% was not aware that it existed.

Most clinical rotations were completed in internal medicine (73.6%), oncology (70.3%), intensive care (57.1%), antibiotic stewardship (56.0%) and pediatrics (47.3%). As many as 90.1% of residents rated the training received in those clinical areas as positive. Tutors in 35.2% of rotations were pharmacists and participated in the evaluation process 34.1% of the time. A total of 70.3% (63/91) of residents did clinical rotations in other hospitals, including 10 rotations in international centers.

As regards on-call shifts, although significant disparity was observed in the number and type of on-call shifts worked, most of them were worked in the afternoon on weekdays and in the morning or afternoon on weekends. Eighty-one percent of respondents considered the level of responsibility assigned to them during their on-call shifts appropriate and 69.2% believed that they had received adequate supervision. Their supervisor during their on-call shifts could either be physically present (25.3%), working remotely (25.3%) or both (partly on site and partly off-site) (49.4%).

When asked about the time devoted to clinical work (including on-call stints) during their work day, 53.8% of respondents said they devoted 30-35 hours a week and 28.6% said they devoted more than 35 hours a week, which means that 96.7% had less than 10 hours a week for educa-

Table 2. Satisfaction of the surveyed population with different aspects of their residency

Variable	n	Mean \pm SD
Overall satisfaction	91	3.52 \pm 0.92
Sex		
Males	27	3.41 \pm 1.01
Females	64	3.56 \pm 0.89
Age (years)		
26-30	83	3.45 \pm 0.91
31-35	7	4.29 \pm 0.76
> 35	1	4.00
Welcome received	91	3.97 \pm 0.92
Usefulness of intranet/educational website	91	3.00 \pm 1.02
Access to resources	91	4.04 \pm 0.89
Individualized training plan	86	3.40 \pm 0.96
Main tutor	91	3.12 \pm 1.27
Tutoring by other staff members	91	2.97 \pm 0.87
Rotations schedule	91	3.63 \pm 1.17
Supervision of rotations by staff members	91	3.10 \pm 1.03
Training for clinical rotations	91	3.69 \pm 0.94
Level of on-call responsibility	91	3.41 \pm 0.99
On-call supervision	91	2.90 \pm 1.17
Service sessions	91	3.35 \pm 0.94
In-hospital cross-specialty training	91	2.93 \pm 0.95
SEFH-sponsored training activities	91	3.86 \pm 0.75
Information on research activities	91	2.98 \pm 0.94
Encouragement to do research or publish	91	2.60 \pm 1.28

Grades were as follows: 5 "very satisfied", 4 "satisfied", 3 "acceptably satisfied", 2 "dissatisfied" y 1 "very dissatisfied".

SD: standard deviation; SEFH: Spanish Society of Hospital Pharmacists.

tional or research activities. A total of 82.4% of respondents participated in at least three sessions a year, with 69.2% considering that an adequate number. The anticipation with which the sessions were convened was thought appropriate by 91.2% of respondents, while 84.6% said they were satisfied with the quality of the sessions organized.

As for the cross-specialty scheme organized by each hospital, 70.3% of respondents were satisfied with the activities organized; and as regards SEFH-sponsored activities for residents, 74.7% considered them good or very good.

When asked about research, 69.2% of respondents claimed that the information received on research activities was adequate, while 52.7% stated that they received the necessary encouragement and support to participate in them. A total of 35.2% of respondents had produced five or less publications or oral communications for congresses as first authors; 30.8% had completed (or were working on) their PhD dissertation during their residency, and 45.1% were involved in a research project.

Lastly, 89% of respondents were positive about the training received in their hospital, and 75.8% of them claimed they would choose the same hospital again.

Tables 3 and 4 present the results of a bivariate and multivariate analysis of demographic, training and satisfaction variables, related with overall satisfaction. The analysis revealed a statistically significant association between overall satisfaction and the following variables: supply of information on-call shifts; supply of information on research activities; availability of a tutor during rotations; on/off-site availability of a staff member during on-call shifts; participation in research projects; welcome received on arrival; usefulness of hospital's intranet/educational website; attunement of the re-

sidents' individualized training plan to the characteristics of the specialty; work of the main tutor; tutoring provided by other staff members; frequency of structured interviews; compliance with rotations schedule; supervision by staff members during rotations; training provided during rotations; empowerment during on-call shifts; service sessions; in-hospital cross-specialty training activities; and SEFH-sponsored training activities. The multivariate analysis performed showed that the work done by the main tutor was independently related with overall satisfaction.

Discussion

Garnering feedback from specialist trainees is a prerequisite for improving the quality of any health system^{3,7}. The percentage of responses in our sample (67.4%) is within the range reported in the literature (50-90%)^{3,4,8}. Previous reports have usually related the percentage of responses received with whether questionnaires were self-refilled or not, and with the respondents' motivation level. Such methodologies might introduce a bias and lead to erroneous conclusions.

In the present study, the respondents' overall satisfaction was high, as was their satisfaction with the training they received. Moreover, a high percentage of residents said that they would choose the same hospital if they had to start their residency again.

Individual training plans are prepared by each resident's tutor based on the specialty's official curriculum, taking into consideration each hospital's characteristics and the needs and interests of every resident. This plan makes a huge contribution to the residents' expertise as it allows tutor and resident to jointly define the competencies to be acquired, the mechanisms

Table 3. Bivariate and multivariate analysis of the association between demographic and training variables, and resident satisfaction factors

Variables	Categories	n (%)	ORc	CI 95%	ORa	CI 95%
Demographic						
Sex	Female	64 (70.30)	0.907	0.367-2.239		
Age (years)	> 30	8 (8.80)	1.477	0.331-6.587		
Nr residents in the unit	> 6	49 (53.90)	0.934	0.408-2.135		
Training-related						
TP includes rotations schedule	Yes	72 (79.10)	5.111	0.963-27.133		
TP includes information on on-call shifts	Yes	38 (41.80)	2.800	1.112-7.052		
TP includes research activities	Yes	25 (27.50)	5.639	1.714-18.551		
TP includes training activities	Yes	67 (73.60)	1.885	0.570-6.226		
Department has a protocol ^a	I am not sure	38 (41.70)	1.000			
	No	21 (23.10)	0.450	0.149-1.363		
	Yes	21 (23.10)	1.980	0.742-5.286		
	Yes, but unexplained	18 (19.80)	2.333	0.476-11.441		
Rotations-specific tutor	Yes	56 (61.54)	3.046	1.267-7.321		
Do you do external rotations?	Yes	64 (70.33)	0.907	0.367-2.239		
Staff member present during on-call shifts?	On-site	23 (25.27)	1.000			
	Off-site	23 (25.27)	2.494	0.745-8.342		
	On/off-site	45 (49.45)	1.043	0.381-2.852		
Attendance at CDP activities	Yes	78 (85.70)	0.693	0.208-2.305		
Publications or oral communications ^b	< 5	32 (35.16)	1.000			
	5-10	29 (31.87)	0.945	0.346-2.586		
	11-15	15 (16.48)	1.324	0.381-4.595		
	16-20	9 (9.89)	0.706	0.160-3.122		
	> 20	6 (6.59)	1.765	0.282-11.044		
Participation in research projects	Yes	41 (45.05)	3.625	1.505-8.731		
PhD dissertation during residency	Yes	28 (30.77)	1.497	0.606-3.701		

^aSupervision and progressive empowerment protocol. ^bAs first author.

CDP: cross-discipline plan; CI: confidence interval; ORa: adjusted odds ratio; ORc: crude odds ratio; TP: training program.

Table 4. Bivariate and multivariate analysis of the association between different variables and overall satisfaction

Variable	n (%)	ORc	CI 95%	ORa	CI 95%
Welcome received	91 (100.00)	1.695	1.044-2.753		
Usefulness of intranet/educational website	91 (100.00)	1.560	1.015-2.400		
Access to resources	91 (100.00)	1.241	0.778-1.981		
Individualized training plan	86 (94.51)	4.209	2.102-8.427		
Main tutor	91 (100.00)	5.391	2.843-10.223	3.905	1.972-7.734
Tutoring by other staff members	91 (100.00)	10.598	3.856-29.123	2.232	0.949-5.252
Frequency of structured interviews	91 (100.00)	1.724	1.227-2.423		
Compliance with rotations schedule	91 (100.00)	1.863	1.323-2.817		
Supervision of rotations by staff members	91 (100.00)	4.746	2.396-9.404		
Training for clinical rotations	91 (100.00)	1.618	1.006-1.202		
Level of on-call responsibility	91 (100.00)	2.021	1.247-3.275		
On-call supervision	91 (100.00)	1.726	1.171-2.545		
Service sessions	91 (100.00)	3.739	1.938-7.214		
In-hospital cross-specialty training	91 (100.00)	1.600	1.012-2.530		
SEFH-sponsored training activities	91 (100.00)	1.800	1.117-2.900		

CI: confidence interval; ORa: adjusted odds ratio; ORc: crude odds ratio; SEFH. Spanish Society of Hospital Pharmacists.

to be used in the evaluation process, and the level of supervision to be enforced. The tutor is a key element in the learning process¹⁹, a finding that has been borne out by the present paper. Although the tutoring provided by both the main tutor and other staff pharmacists contributed to overall satisfaction, only that provided by the main tutor was found to do so in a statistically significant way.

One of the findings of this study was that 29.7% of residents were not aware of the criteria they were evaluated on. To help tutors with the evaluation process, in May 2018 the SEFH's Tutors Working Group issued a document titled *Herramientas de evaluación para residentes en Farmacia Hospitalaria* (Evaluation tools for hospital pharmacy residents)¹⁰, which discusses all the possible evaluation criteria that may be used.

The study also shows that 35.2% of residents were not informed about the grades they obtained every year. For training to be effective, residents must receive feedback from their tutors on whether the goals established at the different tutor-resident interviews have been achieved¹¹. This allows residents to progress faster in their training program and obtain a favorable evaluation. In this respect, SEFH's Tutors Working Group carried out a Spain-wide survey addressed to resident tutors¹² and detected a need to train tutors on how and when to provide feedback.

Royal Decree 183/2008¹ establishes the need to create a resident supervision system for different specialties, specifying the techniques and practices to be developed and the level of empowerment to be provided at each year of residency. In the survey conducted for the present study, 75.8% of residents considered that the supervision provided by staff members was acceptable; 15.4% had been assigned a supervision protocol and had been progressively empowered to take on more responsibilities. In view of these findings, SEFH's Tutors Working Group published a guide that provided pharmacy units with a model they could use to establish their own resident supervision protocols¹³.

Addition of a fourth year to the Hospital Pharmacy residency program in 1999, heralded a new era in the training of residents. Indeed, pharmacy departments would thereafter be increasingly involved in clinical pharmacy and pharmacists would increasingly become integrated in multi-disciplinary clinical teams. These changes have slowly taken hold and nowadays most pharmacy residents do structured rotations in medical units. According to the survey, only 35.2% of residents stated that the staff member in charge of supervising their rotations was a pharmacist. This means that it was normally a staff member from the relevant clinical area that acted as a supervisor in clinical rotations, which indicates that pharmacists are not fiscally in a significant number of clinical units.

Encouragement to do research or produce publications was the area where residents showed the lowest level of satisfaction (2.60 ± 1.28) as compared with overall satisfaction (3.52 ± 0.92). This is a finding confirmed by other authors^{5,14,15}. The causes of this lack of encouragement include the growing clinical workload healthcare providers are required to shoulder, which limits the time they can devote to other activities. This is borne out by our study, where 96.7% of residents stated that they had less than 10 hours a week available for educational or research activities. This is also connected to the fact that only 30.8% of residents had completed (or were working on) their PhD dissertation. Research is an activity contemplated by all official training programs and all hospital departments wishing to be on the cutting edge of their specialty should ensure that research is integrated within their training programs.

Although the questionnaire has not been validated, it does contain questions included in multiple previously published surveys.

The results of this questionnaire can be used to detect areas for improvement in pharmacy departments, and help tutors identify priorities and share results with other centers.

Overall satisfaction with the training received by fourth-year hospital pharmacy specialist trainees is acceptable. The aspects where respondents expressed lower satisfaction levels had to do with the tutoring provided by their main tutor and other staff members, although only the former reached statistical significance. Areas that should be improved in the future include supervision, the role of staff members in clinical rotations and research. SEFH's Tutors Working Group will work on the aspects mentioned with a view to improving the quality of training received by hospital pharmacy residents.

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Conflict of interests

No conflict of interests.

Presentatón at Congresses

An analysis of a national satisfaction survey of hospital pharmacy residents on the specialized training imparted to them during their residency. Organized by: Spanish Society of Specialized Health Training (SEFSE). A Coruña, 3-5 October 2018.

Evaluating specialized training in the area of hospital pharmacy. Organized by: Spanish Society of Hospital Pharmacists. Palma de Mallorca, 8-10 November 2018.

Contribution to the scientific literature

The need to understand the way future specialists in hospital pharmacy were being trained led the Tutors Working Group of the Spanish Society of Hospital Pharmacists to prepare a questionnaire to be filled by the fourth-year residents in 2018.

The literature search conducted in preparation for drafting the questionnaire revealed the absence of publications on the subject. Only one study was identified that shared the results of a satisfaction survey administered among hospital pharmacy residents, hospital pharmacists and managers prior to the implementation of a new hospital pharmacy training program that included the addition of a fourth year to the resi-

dency program. The publication emphasized the importance of making available suitable instructors and adapting the current infrastructure but made no assessment of the new training program or the residents' satisfaction with its implementation.

This paper seeks to analyze the current situation regarding the training of hospital pharmacy residents, with specific emphasis on their level of satisfaction with the training program they receive and with the instructors imparting it. It also includes an analysis of the available resources and an identification of areas for improvement.

The Tutors Working Group intends to focus their future work on addressing the areas for improvement identified in the study.

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APPENDIX 1

SURVEY FOR FOURTH-YEAR HOSPITAL PHARMACY RESIDENTS

We would like to ask you to give us your opinion about the training you have received over the past four years, and to tell us how satisfied you are with your residency program. Please fill out the brief questionnaire below (your answers will remain anonymous).

*Required field

1. Date *

2. Age *

Please tick one answer only.

☐ 26-30

☐ 31-35

☐ >35

3. Sex

Please tick one answer only.

☐ Male

☐ Female

4. Are you a member of SEFH? *

Please tick one answer only.

☐ Yes

☐ No

5. Number of residents in your department during the 2017-2018 academic year *

Please tick one answer only.

☐ 4 or less

☐ 5-6

☐ 7-8

☐ More than 8

6. Rate the way you were welcomed to the hospital when you first arrived (1 is the worst possible rating, and 5 is the best). *Please tick one answer only.*

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

7. Do you have a good understanding of the teaching structure of your hospital? (teaching committee, evaluation committees, head of studies...) *

Please tick one answer only.

☐ Yes

☐ No

8. How would you rate the usefulness of the hospital's educational intranet/educational website? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

9. How would you rate ease of access to resources such as the library, books, journals, databases, etc. in your hospital? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

10. Were you assigned a personalized education plan? *

Please tick one answer only.

☐ Yes

☐ No

11. Your personalized education plan:

If your answer to the previous question was "Yes", please tick one answer in every row.

	Yes	No
Were you assigned an individualized training program?	<input type="radio"/>	<input type="radio"/>
Does it include a rotation schedule?	<input type="radio"/>	<input type="radio"/>
Does it include information on on-call shifts?	<input type="radio"/>	<input type="radio"/>
Does it include research activities?	<input type="radio"/>	<input type="radio"/>
Does it include training activities?	<input type="radio"/>	<input type="radio"/>

12. How would you rate your individualized training plan adapted to the realities of your specialty? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

13. How would you rate the support and tutoring provided by your main tutor? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

14. How would you rate the tutoring you received from other staff members in your department? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How often do you have structured interviews with your main tutor? *

Please tick one answer only.

- ☐ 0 times a year
- ☐ Once a year
- ☐ Twice a year
- ☐ 3 times a year
- ☐ 4 times a year or more

16. Are you familiar with the criteria applied to evaluate the work done by residents? *

Please tick one answer only.

- ☐ Yes
- ☐ No

17. Are you informed about the grades you obtain every year? *

Please tick one answer only.

- ☐ Yes
- ☐ No

18. Who informs you of the grades you obtain?

If your answer to the previous question was "Yes," You may select as many answers as you wish.

- ☐ Your tutor
- ☐ Head of studies
- ☐ Hospital Teaching Committee
- ☐ Other: _____

19. Where do you record all the different clinical, educational and research activities you carry out? *

You may select as many answers as you wish.

- ☐ Resident's logbook
- ☐ Annual report
- ☐ Resident's portfolio
- ☐ None of the above
- ☐ Other: _____

20. How would you rate the compliance of your rotation schedule? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. How would you rate the supervision received from your tutor during your rotations? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

22. Does your department have a protocol for supervising and progressively empowering residents? *

Please tick one answer only.

- ☐ Yes
- ☐ Yes, but I nobody has explained to me how it works
- ☐ No
- ☐ I don't know

23. In which of the following departments have you done rotations during your residency? *

You may select as many answers as you wish.

- ☐ Internal medicine
- ☐ Intensive care
- ☐ Oncohematology
- ☐ Pediatrics
- ☐ Hospital Infection Control Unit
- ☐ Other: _____

24. Did anyone supervise your work during your rotations in the different clinical areas? *

Please tick one answer only.

- ☐ Yes, in all clinical areas
- ☐ Only in some clinical areas
- ☐ I never had anyone supervising my work during a rotation
- ☐ I don't do rotations

25. Who is responsible for your training during those rotations? *

Please tick one answer only.

- ☐ A pharmacist
- ☐ A physician
- ☐ Both
- ☐ I don't know

26. How would you rate the training received during your rotation in those clinical areas? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

27. Have you done rotations outside your hospital during your residency? *

Please tick one answer only.

- ☐ Yes
- ☐ No

28. If your answer to the previous question was "Yes," please state whether your external rotations were national or international and how long your external rotation(s) lasted.

29. How many on-call shifts do you work a month on average? *

30. What kind of on-call shifts do you do in your department? *

You may select as many answers as you wish.

- ☐ 24-hour on-call shifts
- ☐ Afternoon on-call shifts on weekdays
- ☐ Morning on-call shifts on weekends
- ☐ Morning and afternoon on-call shifts on weekends
- ☐ Home call shifts

31. Do you consider the level of responsibility given to residents on call to be appropriate? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

32. Do you consider that residents are appropriately supervised during their on-call shifts? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

33. The person in charge of supervising residents during on-call shifts is usually ... *

Please tick one answer only.

- ☐ On site
- ☐ Off site
- ☐ Both (on site for some time, and off site for some time)

34. How many hours a week do you devote to clinical work (excluding on-call shifts)? *

Please tick one answer only.

- ☐ 20 hours or less
- ☐ 21-25 hours
- ☐ 26-30 hours
- ☐ 31-35 hours
- ☐ Over 35 hours

35. How many hours do you devote to educational or research activities within your weekly work schedule? *

Please tick one answer only.

- ☐ Less than 5 hours
☐ 5-10 hours
☐ 11-15 hours
☐ 16-20 hours
☐ Over 20 hours

36. How many clinical or bibliographic sessions do you teach on average within one year? *

37. Do you consider this number to be appropriate? *

Please tick one answer only.

- ☐ Yes
☐ No

38. Do you think that you are given enough notice of when your sessions will be taking place? *

Please tick one answer only.

- ☐ Yes
☐ No

39. How satisfied are you with the sessions held in your department? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

40. Do you attend any of the training sessions of the Cross-Specialty Resident Training Plan? *

Please tick one answer only.

- ☐ Yes
☐ No

41. How satisfied are you with cross-specialty training activities organized by your hospital? *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

42. Please rate the training activities for residents sponsored or organized by SEFH *

Please tick one answer only.

1 2 3 4 5

☐ ☐ ☐ ☐ ☐

43. How would you rate the information sent to you on research activities? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

44. How would you rate the support and encouragement you get from your tutors to carry out research and produce publications? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

45. How many publications or oral presentations for conferences have you produced as a first author? *

Please tick one answer only.

☐ 5 or less

☐ 5-10

☐ 11-15

☐ 16-20

☐ Over 20

46. Are you currently participating in a research project? *

Please tick one answer only.

☐ Yes

☐ No

47. Have you been working on your PhD dissertation? *

Please tick one answer only.

☐ Yes

☐ No

48. Do you normally attend additional training activities such as courses, lectures and conferences within your working hours? *

You may select as many answers as you wish.

	Courses	Congresses	Other	No
R1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
R4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

49. How would you rate the standard of specialized healthcare training you have received in your hospital? *

Please tick one answer only.

1	2	3	4	5
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

50. If you were asked to select a center to do your residency, would you still choose the same hospital? *

Please tick one answer only.

☐ Yes

☐ No

51. Please share with us any other aspect you consider relevant with respect to your specialized education: *

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