

Training in Medical Residency: the preceptors' view

Formação na Residência Médica: visão dos preceptores

Aderval de Melo Carvalho Filho^{1,2,3} adervalfilho@hotmail.com

Almira Alves dos Santos¹ almira_alves@yahoo.com.br

Rozangela Maria de Almeida Fernandes Wyszomirska^{1,2} rozangelaw@yahoo.com.br

Juliana Holanda de Gauw³ julianagauw@hotmail.com

Iandara Maria Sampaio Ribeiro Soares Gaia⁴ iandaramgaia@hotmail.com

Ricardo Macedo Houly² drhouly@hotmail.com

ABSTRACT

Introduction: Medical residency is a specialization established as the gold standard for the training of specialists. It is a transformative professional phase for the young physician, aimed at improving the quality of medical training. By fostering the resident's training while providing assistance to the users, the preceptor becomes a type of interlocutor between teaching and assistance. This professional needs to encourage their residents to develop their clinical and ethical sense, and it is generally reported that the preceptors are not trained for their teaching duties.

Objective: to analyze the preceptors' experiences and understandings related to the teaching activity in medical residencies.

Method: Descriptive and quantitative study, consisting of 300 preceptors, of all age groups and genders, from Maceió, Alagoas. A questionnaire created and validated by Giroto was applied, containing 35 statements, divided into five factors, with emphasis on the preceptors' opinions on several topics involving their activities. The percentages of positive and negative perceptions about each statement were analyzed.

Results: There was a predominance of positive perceptions about the aptitude for educational activities (88.67%), development of theoretical-practical correlations in preceptorship (96%), perception of the need for learning (98.33%) and updating (87%). There was also a positive perception related to the presence of essential resources for teaching activities (71%); additionally, 91% of the preceptors reported that preceptorship integrates the resident into their team. However, it is noteworthy the fact that preceptorship constitutes non-remunerated work (75.34%), as well as the non-performance of pedagogical training (72%).

Conclusion: The preceptors are part of an adequate environment for their teaching activities, with appropriate physical structure, in addition to support from the management and the institution. They feel able to teach, but in general they have not received teaching training. The residents are adequately incorporated into the residency environment, improving the service. However, overall, the preceptors are not paid for this work.

Keywords: Medical Residency; Preceptorship; Medical Education; Training of human resources in health, Teaching.

RESUMO

Introdução: A residência médica é uma especialização estabelecida como padrão-ouro para formar especialistas. Trata-se de uma fase profissional transformadora para o jovem médico, cuja finalidade é aprimorar a qualidade da formação médica. Ao atuar na formação do residente ao mesmo tempo que presta assistência aos usuários, o preceptor se torna uma espécie de interlocutor entre o ensino e a assistência. Cabe a esse profissional estimular os residentes a desenvolver senso clínico e ético, e há relatos de que, em geral, o preceptor não possui preparação para as funções docentes.

Objetivo: Este estudo teve como objetivo analisar as vivências e os entendimentos dos preceptores em relação à atividade de ensino nas residências médicas.

Método: Trata-se de um estudo descritivo e quantitativo, composto por 300 preceptores, de todas as faixas etárias e sexos, realizado em Maceió, em Alagoas. Foi aplicado um questionário elaborado e validado por Giroto, contendo 35 afirmações, divididas em cinco fatores, com ênfase nas opiniões dos preceptores sobre vários temas envolvendo suas atividades. Analisaram-se os percentuais de percepção positiva e de percepção negativa sobre cada afirmação.

Resultado: Houve predomínio de percepção positiva sobre aptidão para atividades educacionais (88,67%), desenvolvimento de correlações teórico-práticas na preceptoría (96%), percepção de necessidade de aprendizagem (98,33%) e atualização (87%). Também houve percepção positiva sobre a presença de recursos essenciais para as atividades docentes (71%); além disso, 91% dos preceptores relataram que a preceptoría integra o residente na sua equipe. Porém, é interessante o fato de a preceptoría ser uma tarefa não remunerada (75,34%). Além disso, não há capacitações pedagógicas (72%).

Conclusão: Os preceptores estão inseridos em um ambiente adequado para suas atividades docentes, com estrutura física apropriada, além de contarem com suporte da chefia e da instituição. Sentem-se aptos para ensinar, porém, em geral, não receberam capacitação docente. Os residentes estão adequadamente inseridos no ambiente da residência, o que resulta na melhora do serviço. Contudo, os preceptores, em geral, não são remunerados para essa tarefa.

Palavras-chave: Residência Médica; Preceptoría; Educação Médica; Capacitação de Recursos Humanos em Saúde; Ensino.

¹ Universidade de Ciências da Saúde de Alagoas, Maceió, Alagoas, Brazil

² Hospital Universitário Professor Alberto Antunes, Maceió, Alagoas, Brazil

³ Hospital Veredas, Maceió, Alagoas, Brazil

⁴ Santa Casa de Misericórdia de Maceió, Maceió, Alagoas, Brazil

Chief Editor: Rosiane Viana Zuza Diniz. | Associate Editor: Jorge Carvalho Guedes.

Received on 10/09/21; Accepted on 01/19/22. | Evaluated by double blind review process.

INTRODUCTION

First appeared in Brazil in the 1940s, Medical Residency (MR) is a type of training for physicians¹. After approximately 30 years of its implementation, it has been duly regulated by Decree n. 80.281/77², which defined:

Medical Residency is a modality of postgraduate education aimed at physicians, constituting a specialization course, characterized by in-service training on an exclusive dedication regimen, carried out in health institutions, in a university environment or not, under the guidance of physicians with high ethical and professional qualifications².

The resident, usually a recently graduated professional and/or with little professional experience, has the chance to obtain theoretical and, above all, practical experiences in the different specialties offered at the MR. As it is a practical training, MR is usually so impactful that it can be considered as the stage of personal and professional life that most affects the profile of young physicians³.

According to Pessoa and Constantino⁴, it is “the best way to improve and specialize in Medicine”. This idea is reinforced by Trindade⁵, who states that there is “no doubt that MR is still the best way to train medical professionals, with their learning based on in-service training and under the supervision of a preceptor”. It is also considered the gold standard, a reference for training specialist physicians in Brazil², attaining relevance and a huge degree of responsibility for having this characteristic of continuing medical training after graduation.

The preceptor of medical residency and their importance

The preceptor is essential for the quality of the resident's training and must stimulate the development and gain of technical skills and ethical sense^{1,6}, despite the difficulties that may exist in practice environments. They represent a type of interlocutor between the academy (educational world) and health services (care world)^{7,8}, with the simultaneous tasks of working in the training of the students, in addition to providing quality assistance to the health care users⁹. Their objective must be the comprehensiveness of the practices, which is one of the fundamental principles that guide SUS¹⁰.

For the success of the MR program, assistance and educational actions must always be the priority in relation to bureaucratic activities, aiming to train professionals that are closer to the reality of health systems⁷. From this point of view, the residents must gradually mature their reasoning, thus requiring them to be constantly evaluated during their training by the preceptor, working and learning in the same environments where they develop care activities¹.

In 2006, the minimum requirements for the Medical Residency Programs (MRP) operations were established, in addition to specific guidelines on the development of theoretical-practical activities, equipment, theoretical schedules for each year of training, suggestions for carrying out internships and complementary courses for each medical specialty, among other recommendations¹¹.

However, the activities of the preceptor with the resident still tend to be very poorly organized (in the most varied contexts and environments of MR practices), therefore depending on the determinations of the services and hospital institutions^{12,13}. Overall, a lack of conceptual adequacy regarding their pedagogical competence is observed, where the preceptor is considered as a type of technical reference, having competence in their specialty^{12,13}.

Recent national policies to expand the number of MRPs and the increase in vacancies for new graduates have substantially increased the responsibility of the preceptor's role¹⁴, in addition to the existing challenges. This has demanded increasingly more competence and pedagogical training from the preceptor, in addition to a high level of technical training in their specialty, which may be represented by their participation in courses, *stricto sensu* programs or pedagogical training. Blue et al¹⁵ reinforced the value of pedagogical training, declaring that teachers with pedagogical skills tend to enhance their students' learning.

In general, preceptors begin their pedagogical tasks in MR with little or no preparation or training to teach¹⁶. A low percentage of preceptors with some type of pedagogical training has been reported, as well as the knowledge of active teaching methodologies in this type of environment¹⁷.

Despite this unfavorable scenario, there is an understanding by the preceptors regarding the importance of carrying out some training to better develop their tasks in the context of the MR^{12,13,17}. The use of educational resources and their potential for disseminating information¹⁸ can offer educational support¹⁹, being important to contribute to these preceptors' training. Some are already available, in an attempt to meet these deficiencies²⁰⁻²¹.

Once the importance of the preceptor and preceptorship has been evidenced, there is a growing need to understand this environment for the training of specialists, which is a subject that requires further studies. Therefore, this research aims to analyze the experiences and detailed perceptions of preceptors in the educational process in the MR in the city of Maceió, state of Alagoas (AL), Brazil.

METHODS

A descriptive and quantitative study was carried out,

developed at Universidade Estadual de Ciências da Saúde de Alagoas (Uncisal).

There are approximately 450 preceptors in the city of Maceió, AL. The population of the present study was obtained by convenience, consisting of 300 MR preceptors, of both genders and from all age groups. This sample is considered representative of this universe. Specialist physicians who performed pedagogical together with assistance activities¹² with their resident physicians, in a MEC-accredited MRP in Maceió, AL, were considered preceptors. Preceptors who were on leave from their teaching duties were excluded.

Data collection was carried out using the same procedure and the same instrument, in two different moments: in-person (September 2019 to March 2020); and remote (due to the Covid-19 pandemic), between July and August 2020. Even though it was necessary to carry out two approaches for this collection, no difficulties or obstacles were observed that deserved to be recorded for the data analysis.

The invitation to participate in the study was sent personally (in-person collection) and through a message exchange application (remote collection). After acceptance, the filling out of the questionnaire was scheduled for the in-person collection, in which the participants received clarifications about the stages of the study, its purpose and relevance. Data confidentiality was also observed. Afterwards, the Free and Informed Consent form (FICF) was verified for acceptance and subsequent signature. As for the remote format, information was sent to the participants about the study, in addition to the informed consent form, by e-mail or through a messaging application. After signing the FICF, access to the online questionnaire was made available.

The data collection instrument used in the study was developed and validated by Giroto¹³, in her Master's Degree thesis, after an extensive literature review and consensus of experts in preceptorship and health education. Its purpose is to promote a more detailed analysis of preceptorship, focusing on the preceptors' observation and opinion about their activities in the training of specialists, in addition to the structure in the institutions where preceptorship is carried out¹³.

This questionnaire has a total of 35 statements related to the preceptors' view of their role in the educational process, in addition to the practice scenarios. The answers to the statements were constructed using a five-point Likert scale: Totally Agree (TA), Partially Agree (PA), Indifferent (I), Partially Disagree (PD) and Totally Disagree (TD). A value (score) was assigned to each of the responses: 5=TA, 4=PA, 3=I, 2=PD and 1=TD. For the statements that represented negative concepts about preceptorship, their scores were inverted for the purpose of the analysis of the results¹³. It was explained to

the interviewees that they had to interpret the term "student", found in the questionnaire, as "resident".

When analyzing the results of his questionnaire, Giroto¹³ grouped the answers, in which a **Positive Perception (PP)** was considered for the respondents' answers "TA" and "PA" regarding the statement. In turn, the answers "I", "PD" and "TD" were included in a second group, considered as a **Negative Perception (NP)**. The answers were later analyzed through the obtained percentages of PP and NP, in each statement. Therefore, this same methodology validated by the author of the questionnaire¹³ was accurately followed in this study.

Giroto, based on the analysis of the information (when validating her questionnaire), identified five domains¹³. Each statement belongs to one of these five topics below:

Pedagogical Competence: includes statements involving the preceptor's training in teaching aspects, analysis of pedagogical needs and updating, issues related to the preceptor's updating, in addition to the impact of preceptorship on the preceptor.

Educational Support and Resources: analyzes aspects related to the support by the management and to the hospital, in addition to the necessary structure for the preceptor.

Educational Program Planning: it includes topics related to the preceptorship's agreement with the National Curricular Guidelines (NCG), in addition to curricular issues and the importance of the preceptor in the training of the resident.

Teaching-Service Integration: it involves aspects related to comprehensive care and aspects of the health-disease process, in addition to identifying the users' needs to define educational objectives.

Student Presence in the Field of Practice: addresses statements involving the resident physician and their presence in the service, in addition to possible difficulties with the team and with the users. It also addresses the issue between the resident physician and the patients.

Ethics Committee

The study was submitted to the Research Ethics Committee of Uncisal, through Plataforma Brasil, and approved under N. 177881419.0.0000.5011, with Opinions N. 3,553,684 and 3,936,142.

Analysis of results

After the collection, the information was structured into spreadsheets using the Microsoft Excel Program. For the inferential analysis of the statements, the percentages of perceptions (positive or negative) were calculated, in addition to the averages and standard deviations.

RESULTS

The results presented herein derive from a sample of 300 physicians, MR preceptors belonging to five hospital institutions in Maceió, AL: a federal public university institution, a state public university teaching institution and three private hospitals.

Regarding the sociodemographic data, the preceptors' mean age was 42.70 ± 10.06 years. Regarding gender, there was a slight majority of male individuals (50.34%, and 49.66% female). The mean time after graduation was 18.67 ± 10.38 years, with a mean time of preceptorship experience of 6.99 ± 6.66 years. Regarding the medical specialties of the preceptors who answered the questionnaire, the ones most frequently mentioned were the following: Anesthesiology (17.33%) Gynecology and Obstetrics (16.67%), General Surgery (10%), Radiology and Diagnostic Imaging (8.33%), Pediatrics (7.33%), Internal Medicine (6.67%) and Orthopedics and Traumatology (5%).

Preceptors' perception of the preceptorship

Data related to **Domain 1** are detailed in **Table 1**. There was a predominance of PP by the preceptors. Statements 22, 24 and 25 obtained a PP of 98.67%, 96% and 98.33%, respectively. The answers obtained for statements 11 and 21 also obtained a predominance of positive perception (88.67% and 87%, respectively).

Regarding the statements present in **Domain 2**, the means and percentages of the PP were lower in relation to the first factor. Only statements 7 and 10 showed a positive perception above 70%. Statement 32 obtained a PP of 64%. On the other hand, statement 9 obtained only 28% of PP (**Table 2**).

In **Domain 3**, the statements that obtained the highest percentages of PP were statements 5 and 8, with 91.34% and 90.66%, respectively. Statement 30 had the lowest percentage of PP (44.34%). The results are detailed in **Table 3**.

In **Domain 4**, statements 18 and 20 attained the highest percentages of PP (85% and 84.67%, respectively), as shown in **Table 4**.

Table 1. Statements related to Domain 1: Pedagogical Competence.

Statement	PP (%)	NP (%)	Mean	SD
11. I feel able to develop educational activities	88.67	11.33	4.23	0.87
21. I use databases to keep up to date	87.0	13.0	4.28	0.97
22. My educational goals involve attitudes, skills and knowledge.	98.67	1.33	4.8	0.48
23. I know my student and consider their prior knowledge.	86.33	13.67	4.16	0.90
24. I do theoretical-practical correlation in preceptorship.	96.0	4.0	4.65	0.67
25. I understand my learning needs.	98.33	1.67	4.74	0.51
26. I constantly assess my student.	77.33	22.67	3.95	1.10
27. I evaluate the student at the end of the process.	62.0	38.0	3.58	1.40
34. I am interested in pursuing a teaching career.	55.0	45.0	3.42	1.50
35. My role as a preceptor improves my quality of life.	62.0	38.0	3.69	1.21

Source: The authors (2021).

PP - Positive Perception; NP - Negative Perception; Mean - Mean of responses; SD - Standard Deviation.

Table 2. Statements related to Domain 2: Educational Support and Resources.

Statement	PP (%)	NP (%)	Mean	SD
7. I have the necessary resources to develop my educational activities.	71.0	29.0	3.59	1.21
9. I received pedagogical training to develop the preceptorship	28.0	72.0	2.27	1.42
10. I have support from my management to develop the preceptorship.	81.33	18.67	4.23	1.12
13. I participate in the discussion spaces of teaching-service integration.	61.33	38.67	3.43	1.36
17. My preceptorship activity is recognized by the professionals of the higher education institution.	69.0	31.0	3.77	1.27
32. The physical space of my work is adequate for preceptorship.	64.0	36.0	3.49	1.34

Source: The authors (2021).

PP - Positive Perception; NP - Negative Perception; Mean - Mean of responses; SD - Standard Deviation.

Regarding **Domain 5**, statements 16 and 29 showed PP percentages of 82% and 96.33%, respectively. However, statement 33 had the worst evaluation among all 35 statements in the questionnaire, with 24.66% of PP (**Table 5**).

DISCUSSION

Regarding the age of the preceptors in this study, the mean age is close to the national average of physicians, which can be justified by the phenomenon of rejuvenation in Medicine,

resulting from the recent opening of new undergraduate courses¹⁴. Regarding gender, the results are similar to those found in the literature^{1,22}. The mean time of experience in preceptorship indicates preceptors who are qualified, which may reflect the quality in the MR teaching.

Regarding the specialties of the preceptors analyzed in this study, of the five most prevalent ones, four (pediatrics, general surgery, gynecology and obstetrics and anesthesiology) are precisely the medical specialties with the highest number

Table 3. Statements related to Domain 3: Educational Program Planning.

Statement	PP (%)	NP (%)	Mean ± SD
4. I do not have the autonomy to define educational proposals	61.0	39.0	3.49 ± 1.39
5. The service network is co-responsible for training the health professional	91.34	8.66	4.45 ± 0.87
6. My preceptorship activities are in accordance with the National Curriculum Guidelines.	79.34	20.66	4.11 ± 0.94
8. My preceptorship activity integrates the student into the health team.	90.66	9.34	4.41 ± 0.86
14. My in-service activities have been reorganized around the students' presence.	56.0	44.0	3.29 ± 1.41
15. I know the curriculum of the course that I teach.	74.0	26.0	3.89 ± 1.34
30. I develop research activities together with the students.	44.34	55.66	3.00 ± 1.49

Source: The authors (2021).

PP - Positive Perception; NP - Negative Perception; Mean - Mean of responses; SD - Standard Deviation.

Table 4. Statements related to Domain 4: Teaching-Service Integration.

Statement	PP (%)	NP (%)	Mean	SD
18. My practice allows me to articulate biological, social and cultural aspects of the health-disease process.	85%	15%	4.20	0.94
19. I identify the health needs of the population I treat to define educational goals.	75%	25%	3.97	1.01
20. My educational goals do not take into account the health needs of the population.	84.67%	15.33%	4.32	1.03

Source: The authors (2021).

PP - Positive Perception; NP - Negative Perception; Mean - Mean of responses; SD - Standard Deviation.

Table 5. Statements related to Domain 5: Student Presence in the Field of Practice.

Statement	PP (%)	NP (%)	Mean	SD
1. The student's presence in the work environment overloads my activities.	63%	37%	3.68	1.27
2. The student's presence displeases users.	69.67%	30.33%	3.84	1.19
3. The quality of my service improves with the student's presence.	73.34%	26.66%	3.98	1.06
12. The entire health team at my service participates in student training.	65.34%	34.66%	3.54	1.28
16. The student's presence at the service compromises patient safety.	82%	18%	4.22	1.08
28. Student assessment is not my responsibility.	71%	29%	3.85	1.47
29. I learn from my student	96.33%	3.67%	4.68	0.62
31. The presence of the student in the service generates conflicts in the team	73%	27%	4.00	1.21
33. I am paid to be a preceptor.	24.66%	75.34%	2.02	1.51

Source: The authors (2021).

PP - Positive Perception; NP - Negative Perception; Mean - Mean of responses; SD - Standard Deviation.

of board-certified professionals in the country (approximately 45% of the specialists)¹⁴.

Regarding the five domains of the questionnaire created and validated by Giroto¹³, in **Pedagogical Competence**, the results suggest that the participants of this study recognize the importance of their competences in the educational process of MR. They also claim to be aware of the importance of scientific updating and continuous improvement to perform their tasks in MR with quality.

The concept of competence, as well as its importance (especially in MR) can be defined by the use of knowledge and skills, aiming to benefit the individual or an entire society²³. And updating throughout one's professional life is of the utmost importance for preceptorship to be developed with quality. Barreto and De Marco²⁴, in qualitative study with preceptors, observed that there is a demand from preceptors for update offers, especially in health education, although these professionals do not independently seek these courses.

Almost all respondents claimed to correlate theory and practice in their everyday practice with residents. They also mentioned performing continuous evaluations and at the end of the MR period (statements 26 and 27), thus generating several learning opportunities. It is mandatory to assess the resident, and their criteria must also be known¹¹.

The questionnaire validated by Giroto¹³, despite addressing the topic of resident evaluation, does not focus on details of the assessment process. According to the resolution of the National Commission of Medical Residency (CNRM, *Comissão Nacional de Residência Médica*) number 02/200611, the theoretical, practical and attitudinal assessment types are predicted, including ethical-social behavior. The minimum frequency of these evaluations must be quarterly and, in addition to meeting the workload, approval in the evaluations is a requirement for promoting the resident to the following year and for completion of the program¹¹. However, the aforementioned resolution¹¹ does not specify how the preceptor should evaluate their resident. The formative evaluation is characterized by being carried out in several stages and by stimulating the development and acquisition of skills, allowing readjustments during the period. It includes the feedback (the feedback from the preceptor) as the most effective tool²⁵.

In general, these preceptors feel prepared to develop their teaching activities (**statement 11, Pedagogical Competence**), suggesting that they feel secure both in their assistance (attending their patients) and teaching functions (accompanying their residents), in their commitment to the residents.

Regarding teaching, it is important to highlight that those teachers/preceptors who have a greater aptitude

for teaching will have an enormous potential to positively influence their students. Otherwise, students who have contact with tutors with little teaching skills may demonstrate lower rates of significant learning¹⁵. Thus, the preceptor who is technically and pedagogically prepared for preceptorship will have a greater chance of having tools that will help them in their task of teaching. Hence the importance of carrying out pedagogical training by the preceptor to better perform their teaching activities.

In response to **statement 34**, it was shown that preceptors are interested in teaching, with 55% of PP for this statement. One possibility that may explain this finding is the fact that the teaching career (in the context of undergraduate school) is yet another professional option, considering the expansion of medical courses across the country¹⁴. It can also constitute one more sign of the preceptors' interest and commitment with medical education. However, a factor that can negatively influence the interest in teaching is the low remuneration, according to Barbosa²⁶, especially when compared to other higher education professions.

Finally, Giroto¹³ described a similar finding to this study, when reporting a predominance of PP for the identification of their needs to prepare for preceptorship (statement 25), even considering themselves mostly adequate for this activity (statement 11).

In the **Educational Support and Resources** domain, the results showed that in general the preceptors claim to be in an appropriate physical space and structure for MR activities. Therefore, when concerning aspects such as support and physical structure, they consider that the fact they have the necessary means to carry out their educational practices (predominance of PP in statement 7) means the acknowledgement of the importance of their activity in MR. They also claim they have adequate physical space (PP predominance in statements 32) and that they receive adequate support from their managers and the institutions that regulate the MRP (PP predominance in statements 10, 13 and 17).

This means that Maceió has preceptors in the MRP who have the appropriate structure for the efficient running of MR activities, in addition to the necessary support from their managers and the hospital institution, which even appreciate them as educators. This is a strong sign that there is a commitment by these other actors, who are also fundamental for MR, aiming to promote quality in their MRPs.

One statement stood out positively was statement number 10 (about the preceptor receiving support from their managers for the preceptorship), reporting the service's commitment to contributing to improvements in the physical structure, aiming to assist in the preceptors'

pedagogical activities with their residents. Therefore, the presence of the residents themselves in the service already has the potential to cause positive impacts on its physical structure, reflected in the acquisition of new materials and improvements in general.

Nevertheless, attention was drawn to the topic of pedagogical training, which showed a proportion of 72% of NP in statement 7. This can be explained by the low number of training courses for preceptorship, which is a matter of concern, as it is important to invest in these preparatory courses. Marins¹⁶ emphasizes this concern, noting that in most health professions there is no tradition in pedagogical training. The author states that, in this environment, there is an established a view that, regardless of having undergone training or not, a professional will necessarily be a good preceptor. Finally, he observes an increase in the training requirements for the preceptor regarding the teaching aspects¹⁶.

A study with preceptors²² identified some rewards they refer to when exercising the preceptorship: continuous updating, service qualification, social transformation, contact with other professionals, daily challenge, personal satisfaction and the possibility of helping to train doctors.

It is worth noting that, although a minority received pedagogical training, most preceptors feel able to carry out their educational tasks (predominance of PP for statement 11 – present in Domain 1). Apparently, there seems to be a contradiction in the preceptors' responses, even when dealing with different domains. One must take into account that, from the preceptors' point of view, it may seem that the knowledge and experience of the specialty technique would be more valuable skills for preceptors in the exercise of preceptorship than pedagogical training, since there is no obligation to carry out previous training to carry out this activity. Thus, the preceptor can perform this activity and feel technically ready, even without training.

With institutional support, there should be additional benefits, such as the chance to stimulate training through courses, valorization and the possibility of financial benefits²². Giroto reported disagreements about aspects of preceptorship recognition by their institutions. The author corroborates the importance of acknowledging preceptorship by the institutions¹³.

The **Educational Program Planning** domain addresses issues related to the planning of teaching activities, as well as statements regarding the definition of the academic curriculum and educational proposals¹³. In this study, a predominance of PP was observed in almost all statements. The preceptors reported that their tasks needed to be reorganized because of the residents. Moreover, these teachers also claimed integrating,

as much as possible, the resident physician into the teams; in general, they mentioned knowing the curriculum of the MRPs in which they are involved.

This represents an understanding of the analyzed preceptors that there is an integration between the teaching network and the service, where the resident physician (professional in training) complements the training (obtained during the undergraduate school) with postgraduate studies, carried out in health institutions, either public or private. These results can be explained by a concern and commitment of the involved parties in providing a quality MR service.

Still in relation to this domain, some data draw a negative attention. Less than half of the preceptors reported carrying out research with residents, a fact that deserves due attention. This means that, from the point of view of the preceptors analyzed in this study, in general there is neither practice, nor the promotion of research within the scope of the MR, which is a point to be improved. This fact can be explained by the low stimulus to research by the hospital institutions. It can also be explained by the excessive workload undertaken by physicians^{8,27}, with research taking a secondary role.

The literature is scarce about research in the MR. It is worth emphasizing that, in this context, there is still little interest and little incentive for research⁸. In general, the preceptors are not seen as researchers and, overall, health work is not yet considered as something that integrates teaching and research²⁵. Unfortunately, preceptors still tend to receive little or no preparation for research orientation, due to curricular failures in their training¹³.

The CNRM resolution number 02/2006, despite requiring that topics such as Scientific Methodology and Biostatistics be addressed among the theoretical-complementary activities, does not condition the performance or participation in research as a prerequisite for the completion of the program¹¹. However, although the MR is mainly aimed at technical education and in-service training², it is important that residents be encouraged to perform this type of activity.

The inclusion in research and performance of scientific studies and/or term paper during the MR can undoubtedly be very valid for the training of this physician undergoing specialization, in the sense of promoting in this student the interest in teaching and research²⁸. According to Marchiori, MRP preceptors are responsible for creating conditions for the development of these activities, offering residents a more comprehensive training²⁸.

Giroto¹³, when analyzing this third domain, disclosed positive perceptions for most statements. However, she reported that most preceptors are unaware of the curriculum of the program in which they are preceptors.

The **Teaching-Service Integration** domain revealed that these preceptors have a predominantly positive perception of the three statements involving these aspects. This means that they articulate biological, cultural and social aspects of the health-disease process in preceptorship. A possible explanation for this fact would be the existence of the preceptors' awareness to use this environment of integration to favor their residents and health users.

A study¹³ showed similar data, with a PP from their preceptors on the aspects addressed in this fourth factor. According to the author, preceptors understand the importance of training professionals focused on comprehensive care.

Moreover, the preceptors of this study also reported identifying challenges in the demands of health users to use as the basis for establishing educational goals in the MR context. That is, they have the ability to integrate care and teaching with their residents. There are reports in the literature of the benefits of this integration, such as an improvement in care for their patients after the implementation of an MR service. The presence of residents, with their natural questions (despite the initial challenges and resistance) tends to motivate preceptors and the entire service, thus allowing a more complete and better quality care for their patients²⁷.

Regarding the factor **Student Presence in the Field of Practice**, given the importance of these topics and discussions involving the resident in practice, it is undisputedly the most frequently analyzed factor, involving the highest number of statements. Most of the preceptors in this research reported that residents in general do not contribute to the overload of their tasks. On the contrary, they mentioned that the inclusion of residents generates benefits not only to their quality of life but also to the quality of care.

Moreover, according to the assessed individuals, the presence of residents tends to give the preceptor, as an educator/assistant, greater learning opportunities. These results can be justified by the preceptors' acknowledgement that their residents represent excellent opportunities and incentives for them to seek improvement in learning and refreshing of knowledge, making it necessary to continue studying and updating themselves.

These mutual benefits generated by this exchange of experiences between preceptor and resident are broad and have also been described in the context of other health professions. Ribeiro and Prado⁷, analyzing practices in health residencies, reported that the preceptor has chances to learn, while helping their students to improve, gain experience and knowledge in practice.

In addition to the MR context, the relationship between preceptor and student is also important in

undergraduate school and should be considered as important as the relationship between physician and patient. In this environment, the preceptor is responsible for the professional initiation of the future physician.

Nevertheless, studies with divergent results were found. The possible work overload was also reported¹³, where the preceptors demonstrated that the students had a negative influence, overloading their activities. This pressure can mean the preceptor's unpreparedness, as they start to accumulate functions, becoming at the same time a service provider (with an increasing work demand) and an educator²².

Regarding the impact of residents on health users and on the service, the present study reported that their presence does not displease them. Residents do not cause harm to patient safety. Moreover, health teams in general welcome them, and can even have a positive impact on their training. The preceptors also stated that, in general, there are no conflicts between residents and their respective services.

The literature reinforces the improvement that an MR can have on the safety and quality of patient care, reflected by the possibility of upgrades and updates of techniques or new procedures. This tends to increase user safety²⁹.

However, on the contrary, a study¹³ described a negative perception of preceptors, who, in general, reported that the presence of residents was displeasing to users, even with the potential risk of compromising their safety. However, the study did not explain the cause for these results.

In this study, only a minority of preceptors mentioned being paid to carry out their educational attributions, whose justification may be related to the scarcity of scholarships or financial aid for preceptorship in Maceió. This is a sign of alarm and devaluation of preceptorship, which can cause dissatisfaction at work and low self-esteem, given the commitment and responsibility the preceptor has in the training of the resident physician. It is worth mentioning that the issue of negative impacts resulting from low or absence of remuneration is well evidenced in the literature, such as discouragement, learning difficulties and drop in performance²⁷.

FINAL CONSIDERATIONS

The results disclosed that most preceptors state they are included in a socially pleasant and suitable environment to carry out pedagogical activities with residents and care for their patients. They report the improvement in their quality of professional life with the company of residents. They also have an adequate physical structure, in addition to the due recognition and support of their respective managers and the institution for carrying out this activity in the MR.

The preceptors also reported having a commitment to the stages of the educational process of their residents. They stated they are prepared to be preceptors, being aware of their own needs for pedagogical training, since the vast majority did not receive preparation to develop teaching activities in preceptorship, a fact that can be of concern. They are aware of the benefits that this type of preparation can bring.

It was also verified that the preceptors have curricular knowledge of the MRPs of which they are part, reporting they have the necessary freedom to define teaching proposals, in addition to seeking to carry out an adequate integration between teaching and service, including the resident into this entire context. However, they drew attention to two points that could be improved. The preceptors, in general, are not conducting research with their residents and are not being adequately paid, which may negatively impact their teaching activities in the MR.

As implications of this study, we suggest the adoption of measures to encourage pedagogical training, the establishment of a remuneration for preceptorship (aiming at professional valorization), in addition to the implementation of measures to encourage research within the scope of the MR.

The data obtained from this study are representative of the preceptors of the city in which this study was carried out; however, it is not representative for the universe of MR preceptors in Brazil. Undoubtedly, the presented data help to elucidate several aspects of this very relevant topic and could be the basis for future studies where an analysis of the power of the study can be carried out, or we suggest a national study involving MR preceptors, with the application of this questionnaire created and validated by Giroto.

Additionally, this knowledge can be considered as the basis for future analyses of other populations of preceptors, in addition to other studies on preceptorship, provided that possible population and regional particularities are considered.

AUTHORS' CONTRIBUTION

Aderval de Melo Carvalho Filho contributed to data curation, acquisition of funding, research, resources, supervision. Almira Alves dos Santos contributed to the investigation and validation. Rozangela Maria de Almeida Fernandes Wyszomirska contributed to the supervision and validation. The three abovementioned authors contributed to the study design, formal analysis, methodology, project management, visualization, and the review and editing of the manuscript. Juliana Holanda de Gauw contributed to the supervision, and the review and editing of the manuscript. Iandara Maria Sampaio Ribeiro Soares Gaia contributed to data curation and supervision. Ricardo Macedo Houly contributed to the investigation and data curation

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

SOURCES OF FUNDING

The study was funded by Universidade Estadual de Ciências da Saúde de Alagoas.

ACKNOWLEDGMENTS

The publication of this article was funded by the Professional Master's Degree in Health and Technology Teaching (MEST) at Universidade de Ciências da Saúde de Alagoas (Uncisal), to which the authors are grateful.

REFERENCES

1. Botti SHO. O papel do preceptor na formação de médicos residentes: um estudo de residências em especialidades clínicas de um hospital de ensino [tese]. Rio de Janeiro: Escola Nacional de Saúde Pública Sergio Arouca; 2009 [acesso em 27 ago 2021]. Disponível em: https://www.arca.fiocruz.br/bitstream/iciict/2582/1/ENSP_Tese_Botti_Sergio_Henrique.pdf.
2. Brasil. Decreto nº 80.281, de 5 de setembro de 1977. Regulamenta a Residência Médica, cria a Comissão Nacional de Residência Médica e dá outras providências. Brasília, DF: Presidência da República; 1977 [acesso em 21 set 2021]. Disponível em: http://www.planalto.gov.br/ccivil_03/decreto/1970-1979/D80281.htm.
3. Feuerwerker L. Mudanças na educação médica e residência médica no Brasil. *Interface (Botucatu)*. 1998;2(3):51-71 [acesso em 12 jul 2021]. Disponível em: <https://www.scielo.br/pdf/icse/v2n3/05.pdf>.
4. Pessoa JHL, Constantino CF. O médico residente como força de trabalho. *Rev Soc Cardiol Estado de São Paulo*. 2002;12(6):821-5 [acesso em 19 jul 2021]. Disponível em: <http://www.sbccc.org.br/residentes/downloads/artigosocesp.pdf>.
5. Trindade CEP. O preceptor na residência médica em pediatria. *J Pediatr*. 2000;76(5):327-8 [acesso em 14 mar 2021]. Disponível em: <http://www.jpmed.com.br/conteudo/00-76-05-327/port.pdf>.
6. Missaka H, Ribeiro VMB. A preceptoria na formação médica: o que dizem os trabalhos nos congressos brasileiros de educação médica 2007-2009. *Rev Bras Educ Med*. 2011;35(3):303-10 [acesso em 12 maio 2021]. Disponível em: <https://www.scielo.br/pdf/rbem/v35n3/a02v35n3.pdf>.
7. Ribeiro KRB, Prado ML. A prática educativa dos preceptores nas residências em saúde: um estudo de reflexão. *Rev Gaucha Enferm*. 2013;34(4):161-5 [acesso em 15 set 2021]. Disponível em: <https://seer.ufrgs.br/RevistaGauchadeEnfermagem/article/view/43731/28959>.
8. Autonomo FROM, Hortale VA, Santos GB, Botti SHO. A preceptoria na formação médica e multiprofissional com ênfase na atenção primária: análise das publicações brasileiras. *Rev Bras Educ Med*. 2015;39(2):316-27 [acesso em 26 mar 2021]. Disponível em: <https://www.scielo.br/pdf/rbem/v39n2/1981-5271-rbem-39-2-0316.pdf>.
9. Perim GL, Abdalla IG, Aguiar-da-Dilva RH, Lampert JB, Stella RCR, Costa NMSC. Desenvolvimento docente e a formação de médicos. *Rev Bras Educ Med*. 2009;33(1 supl 1):70-82 [acesso em 11 abr 2021]. Disponível em: <http://www.scielo.br/pdf/rbem/v33s1/a08v33s1.pdf>.
10. Brasil. Constituição da República Federativa do Brasil. Brasília, DF: Presidência da República; 1988 [acesso em 17 jun 2021]. Disponível em: http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm.
11. Brasil. Resolução CNRM nº 02/2006, de 17 de maio de 2006. Dispõe sobre requisitos mínimos dos Programas de Residência Médica e dá outras providências. Brasília; 2006 [acesso em 19 jan 2021]. Disponível em: chrome-extension://efaidnbnmnibpcjpcglclefndmkaj/viewer.html?pdfurl=http%3A%2F%2Fitarget.com.br%2Fnewclients%2Fsbpt.org.br%2F2011%2Fdownloads%2Ftemp%2FCNRM_Res02_17052006_parte.pdf&clen=26947&chunk=true.

12. Botti SHO, Rego S. Preceptor, supervisor, tutor e mentor: quais são seus papéis? *Rev Bras Educ Med.* 2008;32(3):363-72 [acesso em 3 ago 2021]. Disponível em: <https://www.scielo.br/pdf/rbem/v32n3/v32n3a11.pdf>.
13. Giroto LC. Preceptores do Sistema Único de Saúde: como percebem seu papel em processos educacionais na saúde [dissertação]. São Paulo: Universidade de São Paulo; 2016 [acesso em 9 set 2021]. Disponível em: http://fm.usp.br/cedem/conteudo/publicacoes/cedem_129_dissertacao_leticia_cabrini_giroto.pdf.
14. Scheffer M, Cassenote A, Guilloux AGA, Biancarelli A, Miotto BA, Mainardi GM. Demografia médica no Brasil 2018. São Paulo: Departamento de Medicina Preventiva da FMUSP, CFM-SP, CFM; 2018 [acesso em 23 jul 2021]. Disponível em: <http://www.flip3d.com.br/web/pub/cfm/index10/?numero=15&edicao=4278>.
15. Blue AV, Griffith CH, Wilson J, Sloan DA, Schwartz RW. Surgical teaching quality makes a difference. *Am J Surg.* 1999;177(1):86-89.
16. Marins JN. Formação de preceptores para área de saúde. In: Rant V, organizador. Formação pedagógica de preceptores do ensino em saúde. Juiz de Fora: Editora UFJF; 2011. p. 47-52 [acesso em 15 abr 2021]. Disponível em: https://www2.ufjf.br/editora/wp-content/uploads/sites/113/2018/02/formacao_pedagogica_de_preceptores_do_ensino_em_saude.pdf.
17. Carvalho Filho AM, Santos AA, Wyszomirska RMAF, Medeiros ICF. Preceptores de residência médica: perfil epidemiológico e capacitação pedagógica. *Rev Bras Educ Med.* 2020;4(4):1-8 [acesso em 2 jun 2021]. Disponível em: <https://www.scielo.br/j/rbem/a/9NYdrY7D9CM76JVYDht4wbv/abstract/?lang=pt>.
18. Tavares C, Barbeiro L. As implicações das TIC no ensino da língua. Lisboa: Ministério da Educação, Direção-Geral de Inovação e de Desenvolvimento Curricular; 2011 [acesso em 23 ago 2021]. Disponível em: http://cidtff.web.ua.pt/producao/claraferrao_tavares/implicacoes_tic_pnep.pdf.
19. Magalhães VLC. Educação do futuro: concepção e implementação de um manual interativo digital [tese]. Braga: Instituto de Educação, Universidade do Minho; 2016 [acesso em 18 ago 2021]. Disponível em: <https://repositorium.sdum.uminho.pt/bitstream/1822/43083/1/Vera%20L%20C3%BAcia%20da%20Costa%20Magalh%C3%A3es.pdf>
20. Conselho Regional de Medicina do Paraná. Manual do preceptor de residência médica. Curitiba: CRM/PR; 2011 [acesso em 24 jun 2021]. Disponível em: <https://www.crmpr.org.br/uploadAddress/edicao-preceptor%203667.pdf>.
21. Carvalho Filho AM, Wyszomirska RMAF, Costa PMS, Jucá MJ, Santos AA. Guia/tutorial para formação didático-pedagógica de preceptores de residência médica. Maceió: Uncisal, 2021. [acesso em 12 jul 2021]. Disponível em: <https://educapes.capes.gov.br/handle/capes/598350>.
22. Ribeiro LG. Os preceptores da residência médica em medicina de família e comunidade do estado de São Paulo: Quem são? Onde estão? O que fazem? [dissertação]. Botucatu: Universidade Estadual Paulista "Júlio de Mesquita Filho" [acesso em 1º jun 2021]. Disponível em: <https://repositorio.unesp.br/handle/11449/181625>.
23. Epstein RM, Hundert EM. Defining and assessing professional competence. *JAMA.* 2002; 287(2):226-35 [acesso em 12 ago 2021]. Disponível em: https://files.cercomp.ufg.br/weby/up/148/o/Defining_and_Assessing.pdf.
24. Barreto VHM, De Marco MA. Visão de preceptores sobre o processo de ensino-aprendizagem no internato. *Rev Bras Educ Med.* 2014;38(1):94-102 [acesso em 19 set 2021]. Disponível em: <https://www.scielo.br/pdf/rbem/v38n1/13.pdf>.
25. Borges MC, Miranda CH, Santana RC, Bollela VR. Avaliação formativa e aprendizado na saúde. *Medicina (Ribeirão Preto).* 2014;47(3):324-31 [acesso em 24 maio 2021]. Disponível em: <https://www.revistas.usp.br/rmrp/article/view/86685/89706>.
26. Barbosa A. Salários docentes, financiamento e qualidade da educação no Brasil. *Educ Real.* 2014;39(2):511-32 [acesso em 11 fev 2021]. Disponível em: <https://www.scielo.br/pdf/edreal/v39n2/v39n2a09.pdf>.
27. Sant'ana ERB, Pereira ERS. Preceptoría médica em serviço de emergência e urgência hospitalar na perspectiva de médicos. *Rev Bras Educ Med.* 2016;40(2):204-15 [acesso em 17 mar 2021]. Disponível em: <https://www.scielo.br/pdf/rbem/v40n2/1981-5271-rbem-40-2-0204.pdf>.
28. Marchiori E. Atividades de pesquisa na residência médica. *Radiol Bras.* 2011;44(5):V [acesso em 10 set 2021]. Disponível em: <https://www.scielo.br/j/rb/a/xBbVqK4zQjCLPtH6676HDyf/?lang=pt&format=pdf>.
29. Bof SMS. Preceptoría em medicina de família e comunidade na atenção primária à saúde em Vitória-ES [dissertação]. Rio de Janeiro: Escola Politécnica de Saúde Joaquim Venâncio, Fundação Oswaldo Cruz; 2019 [acesso em 14 jan 2021]. Disponível em: https://www.arca.fiocruz.br/bitstream/icict/36530/2/Sandra_Bof_EPSJV_Mestrado_2019.pdf.



This is an Open Access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.