DOI: 10.1590/1413-81232021266.47052020

Family and Community Medicine Residency Programs for training the health workforce: what do municipal health managers think?

Ana Paula Tussi Leite (https://orcid.org/0000-0002-1797-195X) [1]
Isabel Brandão Correia (https://orcid.org/0000-0002-6950-8684) [2]
Patrícia Sampaio Chueiri (https://orcid.org/0000-0002-0811-3910) [3]
Thiago Dias Sarti (https://orcid.org/0000-0002-1545-6276) [4]
Adelson Guaraci Jantsch (https://orcid.org/0000-0002-3012-5619) [5]
Alice Paul Waquil (https://orcid.org/0000-0002-4959-1433) [1]
Scheila Mai (https://orcid.org/0000-0003-1800-0140) [1]
Vitória Silva da Rosa (https://orcid.org/0000-0001-9105-559X) [1]
Elvira Alicia Aparicio Cordero (https://orcid.org/0000-0003-4193-1939) [1]
Daniel Knupp Augusto (https://orcid.org/0000-0002-5968-4932) [6]
André Ferreira Lopes (https://orcid.org/0000-0003-3503-3614) [7]
Maria Eugênia Bresolin Pinto (https://orcid.org/0000-0002-7536-6299) [1]

Abstract *The training, recruitment and retention of primary care professionals is a constant challenge in Brazil. The recent expansion of family and community medicine residency programs in the country coexists with gaps in the literature on the effects of this process. This article explores municipal health managers' understanding of these programs and the role they play in professional training and improving the quality of health care. We conducted a quantitative and qualitative analysis of the responses to questionnaires answered by 48 health managers working in municipal health services affiliated to residency programs. A descriptive statistical analysis of the quantitative data was performed and the qualitative data were analyzed using thematic analysis. The findings show that efforts were made to incorporate family and community doctors into the health care network and that managers recognized the potential residency program have to improve the quality of care and enhance professional training. Weaknesses were found in actions to improve infrastructure and facilities and the organization of the services affiliated to the programs. This study highlights the potential of residency programs for addressing longstanding problems in primary health care in Brazil when combined with actions to strengthen services, human resources and the programs.*

Key words *Primary Health Care, Family Practice, Internship and Residency*

[1] Programa de Apoio ao Desenvolvimento Institucional do Sistema Único de Saúde (PROADI-SUS), Hospital Moinhos de Vento. R. Ramiro Barcelos 910, Moinhos de Vento. 90035-000 Porto Alegre RS Brasil. aptussi@gmail.com
[2] Faculdade de Ciências Médicas, Universidade de Pernambuco. Recife PE Brasil.
[3] Curso de Medicina, Faculdade Israelita de Ciências da Saúde. São Paulo SP Brasil.
[4] Programa de Pós-Graduação em Saúde Coletiva, Centro de Ciências da Saúde, Universidade Federal do Espírito Santo. Vitória ES Brasil.
[5] Programa de Pós-Graduação em Saúde Pública, Instituto de Medicina Social, Universidade do Estado do Rio de Janeiro. Rio de Janeiro RJ Brasil.
[6] Unimed Belo Horizonte. Belo Horizonte MG Brasil.
[7] Secretaria Municipal de Saúde do Rio de Janeiro. Rio de Janeiro RJ Brasil.

Introduction

The progress made on expanding and improving primary health care (PHC) around the world over the last 40 years coexists with a diverse range of structural shortcomings that continue to threaten the social development of lower and middle-income countries[1,2]. One of the main problems faced by health systems is the training of the health workforce[3,4].

Despite clear evidence that strong PHC structured around an efficient health system produces better and more equitable health outcomes[5], specialist training for health care and the recruitment and retention of health professionals are challenges that are still far from being overcome in Brazil.

These longstanding challenges have been the focus of health and education policies at *different levels* of *government*. Over the last 15 years, various federal government initiatives have sought to address problems related to the training, recruitment and retention of doctors in remote areas, while at the same time seeking to improve the effectiveness of care through incentives for professional training. Initiatives include the Education through Working for Health Program (PET-Saúde)[6], the SUS Open University (UNA-SUS)[7], the Specialist Doctors in Key Areas Support Program (Pró-Residência)[8], the Valuing Primary Care Program (PROVAB)[9], More Doctors Program (PMM)[10] and, more recently, the Doctors for Brazil Program (all acronyms in Portuguese)[11].

The structural shortcomings of the training and recruitment of health care professionals are not exclusive to PHC, but rather just one of the effects of the country's political and economic makeup, which results in deep social inequalities across regions and between urban and rural areas[12]. These historic drivers of institutional inequality are strongly expressed across the entire Brazilian medical education apparatus, both at undergraduate level and in specialist training undertaken in medical residencies. Medical schools and medical residency programs are unevenly distributed across the country, being concentrated in large urban centers in the South and Southeast regions[13,14].

Considering that (1) unlike most high-income countries, doctors in Brazil do not have to do a medical residency to be able to practice[15], (2) residency training programs do not have the necessary structure to absorb all the country's medical school graduates[14], (3) for these reasons, a significant proportion of doctors opt not to specialize or to obtain the title of specialist by other legally permitted means[14,15]; and (4) medical residency is the most appropriate form of training to guarantee the quality of professional practice and care[16], it is apparent that the above problems can result in health inequalities, which add to and aggravate the country's social and economic problems.

This reality is even more evident in PHC. The number of family and community medicine (FCM) residency positions as a proportion of the overall number of medical residency positions in the country is low in Brazil compared to other countries and the FCM residency position take-up rate over the last two years was only 30%[17]. There is therefore a shortage of FCM specialists in Brazil's national health service (the *Sistema Único de Saúde* or SUS) and, despite significant growth in the numbers of FCM doctors recruited in recent years due to the More Doctors Program and local government initiatives, the solution to this staffing problem is still a long way off[14,18].

One of the main innovations in the training of FCM doctors in Brazil is the implementation of robust family and community medicine residency programs (FCMRPs) in conjunction with municipal health authorities. Using original mechanisms such as top-up grants, these programs offer a large number of annual positions and have good position take-up rates, thus making a significant contribution to the local recruitment of qualified PHC doctors. Notable initiatives include Rio de Janeiro, Curitiba, Florianópolis, São Bernardo do Campo, Palmas, Recife and João Pessoa[19-21].

Understanding the facilitators of and barriers to the implementation of FCMRPs is key to developing policies that guarantee a sufficient and qualified workforce to strengthen PHC. As both local policy and decision makers, investigating municipal health managers' understanding of FCMRPs as a tool for training the health care workforce for PHC can help shed light on the reasons that motivate and demotivate these actors from investing in this type of training, especially considering the lack of literature on this topic[22,23].

The vast majority of FCMRPs are implemented in municipal PHC services and a significant part of policies aimed at expanding these programs in recent years have focused on provision at local level[19,24]. Given that the perceptions of local leadership guide local policy and decision-making, including professional training,

Ciência & Saúde Coletiva, 26(6):2119-2130, 2021

this study explored municipal health managers' understanding of and attitudes to FCMRPs as a strategy for training health personnel for PHC and the actions developed by these managers towards strengthening these programs.

Methods

This study draws on data collected by the nationwide survey "Characterization of Family and Community Medicine Residency Programs in Brazil", undertaken by the Hospital Moinhos de Vento under the Unified Health System Institutional Development Support Program (PROADI-SUS, acronym in Portuguese). The survey was conducted using a mixed methods design and this article uses data related to municipal health managers to perform the quantitative and qualitative analyses outlined below.

The FCMRPs and municipalities included in the survey were identified using Ministry of Health data obtained from the National Medical Residency Commission's database. A team of researchers screened the data for inconsistencies and duplicate and missing data, delimiting the study population as follows: municipal health managers, supervisors, preceptors, and medical residents and graduates linked to 249 FCMRPs running in 2019 distributed across 157 municipalities across the country. The present study is limited exclusively to managers of municipal health services that are settings for FCMRPs.

Data were collected using questionnaires designed specifically for each group to obtain a diverse range of information on the structure, management and execution of FCMRPs, thus delineating the profile of these programs through multiple lenses. A interprofessional team with a wide range of expertise in research methods developed first versions of the questionnaires. These versions then underwent a two-stage testing process. In the first stage, FCM experts selected by the Brazilian Society of Family and Community Medicine and Ministry of Health revised the instruments, altering or excluding existing items and including new items where necessary. In the second stage, a different group of FCM experts responded the questionnaires to assess reproducibility and response time, resulting in further alterations and the definition of final versions.

The health manager questionnaire was devised to collect information on the following: sociodemographic characteristics of the respondents; infrastructure and facilities of the educational institutions running the FCMRPs and affiliated health services; training-service integration process; and managers' perceptions of the FCM specialty of the FCMRP. The questionnaire consisted of 30 questions broken down into 72 variables (50 quantitative and 22 qualitative). The instrument used various types of questions – including multiple choice, checkbox, and short and long answers – thus giving respondents the opportunity to express their views on the topics.

The data were collected between January and April 2020. Potential participants were contacted by telephone, email, messaging apps and digital platforms to present the study objectives and methods. A link to the questionnaire on the Research Electronic Data Capture (REDCap) platform was then sent to those managers who agreed to participate. To identify health managers directly involved in FCMRPs, the local government department of health was contacted and asked to indicate a manager to participate in the study. To raise awareness about the importance of the project and maximize the response rate, the survey was widely advertised on social media, including profiles and platforms linked to FCM and the website of the National Council of Municipal Health Departments (CONASEMS, acronym in Portuguese).

The survey database was managed by an expert in data management. A descriptive statistical analysis of the quantitative data (absolute and relative frequencies) was performed using R version 3.6.1. The qualitative data were analyzed using thematic analysis[25]. The corpus consisted of the answers to the open-ended questions, which were carefully read a re-read to identify core themes. For the purposes of this article, we focus on the themes related to the topic of interest of this study. We then performed an integrated group analysis and reflective interpretation of the results drawing on both the quantitative and qualitative data.

All participants approved the study procedures and signed an informed consent form. The study was conducted in accordance the ethical norms and standards for research involving human subjects set out in National Health Council Resolution 466/2012 and the study protocol was approved by the Hospital Moinhos de Vento's Research Ethics Committee.

Results and discussion

The survey results are presented in four sections. First, we describe the characteristics of the health managers, followed by the main features of the municipalities. Then we look at the strategies adopted by municipal health authorities to strengthen FCMRPs. Finally, we outline three core themes generated by the qualitative analysis: the effects of medical residencies on the health system and services; the effects of medical residencies on professional training; and health managers' perceptions of residents and FCMRPs.

Health manager characteristics

Forty-eight health managers answered the questionnaire, representing 30.6% of the municipalities that are settings for FCMRPs in the country (Table 1). Most of the respondents were women (n=30; 62.5%), white (n=30; 62.5%), aged up to 50 years (n=36; 76.7%), had a degree (n=48; 100.0%), and lived in the South and Southeast (n=33; 68.8%). The large majority had a degree in a health-related field (n=38; 80.9%), with most of the individuals in this group having *medical or nursing degree* (n=28; 73.6%). This profile is similar to that found by the National Survey of Municipal Health Departments[26].

Most of the respondents were municipal PHC or health education managers (n=25; 53.2%) and had been in the position for up to three years (n=30; 62.5%) (Table 1). Given that middle-level managers are responsible for defining recruitment and retention strategies, the fact that these individuals had occupied these positions for such a short period of time may explain the variability and instability of FCM residency initiatives[19].

Characteristics of the municipalities

The majority of the municipalities were practice settings for educational institutions offering medical degree programs (n=37; 78.7%), most of which private sector organizations (n=20; 54.0%). Although there were local services with up to seven programs, most of the municipalities had only one FCMRP (n=27; 56.3%). Eighteen (37.5%) of the municipalities had one FCMRP implemented in up to four primary care centers. The sample encompassed a total of 2,502 primary care centers, 390 of which had FMC residents[27]. This is equivalent to 15.6% of the care centers in the municipalities, which is slightly higher than the national rate. The percentage of private medical schools is consistent with data showing that 61% of Brazil's medical schools are private[28]. The majority of the managers who reported that the municipality had a medical degree program (n=30; 63,8%) mentioned that residents receive top-up grants, regardless of whether they study at public or private universities. They also reported that municipal health authorities promote PHC as a practice ground for graduates to stimulate demand for residency positions (Table 2). Studies show that bringing students closer to FCMRP practice settings is recognized as an important factor in choosing the specialty, revealing that managers who promote these programs are on a path towards creating a virtuous circle and strengthening FCM[29].

Strategies adopted by municipal health authorities to strengthen FCMRPs

Almost half of the managers (n=22; 45.8%) said that the local department of health actively participated in the planning and creation of FCMRPs, collaborating with the educational institution in the development of education plans and resident selection processes and defining the number of positions offered and allocation of residents to different practice settings.

With regard to the consolidation of exiting FCMRPs, most municipalities did not have the following plans, strategies and mechanisms in place: (1) Plan to improve the infrastructure and facilities of services with FCMRPs (n=30; 62.5%); (2) Organization of specific work processes in services with FCMRPs (n=30; 62.5%), such as the definition of residents' study and appointment schedules; (3) Training-service integration evaluation plan (n=31; 64.6%); (4) Specific financial incentives to attract FCM specialists (n=25; 53.2%); and (5) Strategy to recruit final-year residents (n=25; 52.1%) (Table 2).

However, most of the managers reported the existence of public selection processes for the recruitment of FCM doctors (n=31; 64.6%), provision of top-up grants for residents (n=30; 62.5%) and continuing education programs directed at PHC doctors (n=33; 68.8%). However, it was not possible to analyze the specific features of each initiative in detail.

In short, these findings reveal certain weaknesses when it comes to the planning of residency programs and improving infrastructure and facilities and work processes, while at the same time demonstrating efforts on the part of managers to incorporate and retain FCM doctors in

Table 1. Manager sociodemographic characteristics and professional background, Brazil, 2020.

Variable	n (%)
Age group (n=47)	
Up to 29 years	2 (4.3)
30-39 years	17 (36.2)
40-49 years	17 (36.2)
50 years and over	11 (23.4)
Sex (n=48)	
Female	30 (62.5)
Male	18 (37.5)
Race/Color (n=48)	
Black	2 (4.2)
Brown	14 (29.2)
White	30 (62.5)
Yellow	1 (2.1)
Not declared	1 (2.1)
Level of education (n=48)	
Degree	48 (100.0)
Area of degree (n=47)	
Health	38 (80.9)
Other	9 (19.1)
Health profession (n=38)	
Doctor	14 (36.8)
Nurse	14 (36.8)
Other	10 (26.4)
Region (n=48)	
North	3(6.3)
Northeast	10(20.8)
Center-West	2(4.2)
Southeast	18(37.5)
South	15(31.3)
Position (n=47)	
Municipal health secretary	8(17.0)
Primary care manager	10(21.3)
Health education manager	15(31.9)
General coordinator of medical residency	6(12.8)
Other	8(17.0)
Time as manager (n=48)	
Up to 1 year	12 (25.0)
2-3 years	18(37.5)
4-5 years	8(16.7)
6 years and over	10 (20.9)

Source: Elaborated by authors.

the health care network. The lack of local strategies to improve management and strengthen residency programs suggests that many FCMRPs are being incorporated into the day-to-day functioning of health services without any specific major adjustments to the teaching-learning process.

Historically, top-up grants have been one of the main initiatives used to increase take-up of FCM residency positions, achieving relative success when municipal health authorities that have adopted this strategy are compared with those that have not[19,30]. However, strategies to retain final-year residents are rare.

While on the one hand in-service training remunerated in the form of grants may be an attractive way of making cost savings in the short-term, it is hardly enough to ensure that doctors who have recently completed a FCMRP continue working in the municipality, providing longitudinality of care. Without a sustainable strategy to retain final-year residents, the benefits of the investment in professional training are largely limited to the development of individual skills, resulting in only temporary benefits for the local health system.

Most of the managers (n=37; 77.1%) reported that the municipal health authority had the capacity to create new FCM residency positions, with the majority having the necessary infrastructure (n=31; 83,3%) and human resources (n=23; 62.2%), and some having the necessary financial resources (n=12; 32.4%). However, 15 (31.2%) managers said that they did not intend to create new positions, citing the following as reasons: lack of capacity, low take-up rates, recent expansion of positions, and lack of understanding regarding the services provided and FCM residency on the part of other managers.

Although the study design does not permit an in-depth analysis of the managers' intentions to use FCMRPs as a strategy to drive the expansion of PHC coverage, these findings show that the municipalities with the necessary local infrastructure, facilities and human resources have the potential to expand FCMRPs. However, lack of funding for structuring PHC services and FCMRPs and stimulating the occupation of residency positions may be severely limiting this process in other municipalities. The expansion of FCMRPs, combined with adequate recruitment policies, can ensure that quality primary care is delivered to a larger proportion of the population, enabling more satisfactory long-term outcomes due to the potential for promoting reflection on care models and quality, professional training and qualification, the expansion of coverage, and improvements in the health infrastructure and facilities[19,20].

Table 2. Municipal government strategies to strengthen family and community medicine residency programs – Brazil, 2020.

Variable	n (%)
Strategies to stimulate demand for residency positions (n=47)*	
Yes	30(63.8)
No	6(12.8)
Municipality does not have a medical degree program	10(21.3)
Didn't know	1(2.1)
Plan to improve the infrastructure/facilities of services with a FCMRP (n=48)	
Yes	14(29.2)
No	30(62.5)
Didn't know	4(8.3)
Organization of specific work processes in services with a FCMRP (n=48)**	
Yes	15(31.3)
No	30(62.5)
Didn't know	3(6.3)
Training-service integration evaluation plan, including MR (n=48)	
Yes	12(25.0)
No	31(64.6)
Didn't know	5(10.4)
Continuing education program directed at PHC doctors (n=48)	
Yes	33(68.8)
No	13(27.1)
Didn't know	2(4.2)
Financial incentive for preceptors (n=48)	
Yes	22(45.8)
No	22(45.8)
Didn't know	4(8.3)
Top-up grant for residents (n=48)	
Yes	30(62.5)
No	17(35.4)
Didn't know	1(2.1)
Strategy to recruit final-year residents (n=48)	
Yes	21(43.8)
No	25(52.1)
Didn't know	2(4.2)
Public selection process for the recruitment of FCM doctors (n=48)	
Yes	31(64.6)
No	17(35.4)
Didn't know	0(0.0)
Specific financial incentives to attract FCM specialists (n=47)	
Yes	20(42.6)
No	25(53.2)
Didn't know	2(4.3)

FCMRP: family and community medicine residency program; PHC: Primary Health Care; FCM: family and community medicine. *Bringing medical students closer to PHC practice; top-up grants; advertising/dissemination; integration between educational institutions and services; valuing the role of preceptors; improving services; integration between the FCMRP and interprofessional residency program. **Organizing study-learning schedules; adoption of in-service training regulatory norms established by government bodies.

Source: Elaborated by authors.

Effects of medical residencies on the health system and services

Most of the managers (n=32; 68.1%) reported that the implementation of the FCMRP in the municipality had a positive impact on the local health system and services, strengthening the attributes of primary care, especially access, quality and patient-satisfaction, either by providing a more systematic perspective on teaching-learning or mobilizing financial resources for PHC. According to one of the managers, the FCMRP:

Contributes to the organization and quality of access to PHC; it brings academia to the practice setting, stimulating research, knowledge [generation] and innovation; it improves the quality of health care; it contributes to the training-service-community integration policy and management (Manager 1).

Through the eyes of the health managers, the FCMRP is a device that strengthens health care, changing clinical practice while at the same time enhancing the intervention characteristics of the health region that are essential to the Family Health Strategy. The respondents also point to greater concern on the part of professionals with the everyday practice of health teams, leading to improved coordination with other services in the health region and stronger patient affiliation with services:

[There is] a need to improve PHC and the competencies of attending physicians, [and the FCMRP contributes to this] enabling, developing the portfolio of PHC services and, primarily, changing attitudes to care, including, but not restricted to: health surveillance, patient-centered care, humanization, active patient participation, improving the longitudinality of care and regulating handover (Manager 2).

According to the managers, the consolidation of the care model in services with FCMRPs generates important results for the municipal health system, increasing the resolvability of care through more reflective teams committed to delivering quality care, broadening the diversity of actions developed by health professionals, and raising the number of appointments, consequently improving patient satisfaction:

The [residency] program manages to transform care. It reduces test requests, referrals. It widens the PHC service portfolio; it increases patient satisfaction and resolvability (Manager 3).

[The residency program] enhances the work of health teams, not only in terms of number of appointments, but also health promotion and prevention initiatives (Manager 4).

[The residency program] does an excellent job; it's low cost and provides a greater guarantee of retention of professionals (Manager 5).

Apart from increasing training-service-community interaction [...], municipal health authorities with residency programs receive more resources in the current model of primary care funding (Manager 6).

Another effect, reported by five managers, is improved retention of doctors, which, combined with better qualification and a higher degree of specialization, contributes to ensuring the longitudinality of care, ultimately strengthening PHC. According to the managers, factors that improve retention include the fact that residents spend at least two years in the service, increased investment in preceptors and health teams, thus building stronger teams, and the prospect of final-year students being hired in the future. It is interesting to note that all five managers said mechanisms were in place for the recruitment of final-year students (for example, public selection processes close to the completion of residency programs, changes to working hours or guaranteed employment in the service where the residency was undertaken), and three reported that the local municipal health authorities provide specific financial incentives to FCM doctors. However, two of the managers mentioned that selection processes had not been launched while during their time in the position, reinforcing the hypothesis that understanding the potential benefits of FCMRPs for local health systems does not necessarily unfold into managerial efforts to promote recruitment.

Investment in the training, recruitment and retention of health professionals can create a virtuous circle, directly addressing the root of the chronic problems facing PHC and public health in general in Brazil: underqualified health professionals; poor quality care; low levels of recruitment and retention of professionals; and limited expansion of access to PHC services[19,20,30,31].

These findings are consistent with the literature, suggesting that FCMRPs constitute a cost-effective strategy capable of expanding the coverage of PHC, resulting in clear short and long-term benefits. FCMRPs have the potential to contribute to overcoming longstanding problems faced by PHC services in Brazil, such as high turnover rates of health care professionals, care gaps in the most socially vulnerable regions, low quality of care, and shortages of FCM specialists[31-34].

Effects of medical residencies on professional training

Although mentioned less frequently, other positive effects of FCMRPs highlighted by the respondents include continuing professional development and medical training. These effects gain a broader meaning, ranging from overcoming problems related to medical training to enhancing interprofessional training:

The residents motivate the other professionals in the teams, in the sense of broadening knowledge, contributing to the reorganization of team work processes, improving the welcoming of patients in the health center. They develop intervention projects in the community, taking into account the epidemiological profile of the local population of the health region and contributing to training these professionals to work in the SUS (Manager 7).

In the words of one manager, empowering the "SUS as a school" affects all health professionals, not just doctors. One of the most important issues raised by the respondents shows that teaching-learning processes triggered and/or enhanced by FCMRPs motivate teams to adopt other approaches and enable the integration of the multiple health policies operating in services. The managers suggest that as part of the teaching-learning processes, residents provoke the health team to reflect on practices, meaning that FCMRPs are not an isolated policy within health services:

[The residency] program stimulates the continuing education of preceptors, helping to integrate the interprofessional network, stemming from a movement to integrate the FCMRP into the interprofessional PHC program in conjunction with the support center for family health. The residents tend to provoke discussion of more complex cases with other professionals that can collaborate. Residents develop research output and significant interventions in the network, some simple, but with a major impact. In addition, residents, especially from the second-year, have the potential to carry out matrixing together with other professionals from the network (Manager 4).

This means that the skills and competences of residents resemble the desirable characteristic for PHC doctors. Besides training professionals who actively participate in health teams and promote innovation in health care throughout the health region, FCMRPs provide doctors with the skills and competencies needed to deliver comprehensive care that considers the complexities of disease and the health status of the population:

[...] the residency program enables the training of doctors with a profile oriented towards primary care, encompassing the entire health-disease process of individuals and families and the social context in which they are embedded (Manager 6).

The changes in professional training promoted by FCMRPs partially explain many of the positive outcomes observed in health systems. Despite the quantitative study design and the fact that the managers' reflections provide a literal perspective on continuing medical education, it is evident that FCMRPs can open more complex, interactive and participatory training pathways anchored in the everyday practice of health professionals within the complex reality of health services. By promoting reflection among health teams, FCMRPs are a potential tool for promoting permanent education and not just continuing education, as it may initially seem[35,36].

Health managers' perceptions of residents and FCMRPs

The findings reveal at least two constructs in the managers' accounts about "being" a resident. In the first, residents are seen to motivate other professionals, provoke discussion about patients and propose and implement interventions that are often not part of the everyday practice teams. In this way, as mentioned above, they help to strengthen the principles and models of care, generating positive outcomes for the system and service.

At the same time, some managers depict residents as subjects who are there to increase access to care and resolubility. These narratives suggest that managers see residents through the lens of care delivery, occupying care spaces to increase the service's production capacity. The findings reveal a construct that stems from a more self-serving view of residents, explaining for example why one manager sees residents as professionals "who take on a family health team in cases of vacations or sick/maternity leave avoiding resource cuts" (Manager 8).

These constructs do not necessarily constitute positive and negative poles, with a broader and more powerful teaching-learning relationship at one end and a more restricted and self-serving relationship at the other. Although these constructs tend to appear in isolation in the majority of accounts, the two also show up together, showing that, from the mangers' perspective, residents and FCMRPs can, and it is desirable that they do, promote comprehensive care and increase service production.

Study strengths and weaknesses

This study has some limitations. First, the number of managers who participated in the study is relatively low, although the survey response rate (30%) was within the range reported in the literature[37]. Second, the corpus used for the thematic analysis consisted of the managers' answers to the open-ended questions. Although this is a valid research method, the lack of face-to-face interaction with the respondent limits the apprehension and understanding of the complexity of the phenomenon, leaving important gaps. In addition, the questionnaire did not explore the use of federal policies as strategies to strengthen local health services, meaning it was not possible to obtain an adequate understanding of FCMRPs within the suite of other policies aimed at municipal PHC services. However, the study is a pioneer in exploring the facilitators of and barriers to training the SUS workforce for PHC through the implementation of FCMRPs.

Final considerations

RFCMs play an important role in strengthening and expanding PHC and improving the quality of local health services, consequently consolidating the SUS. The findings of this study demonstrate that only some municipal health managers were capable of recognizing this potential and that this recognition does not always lead to the development of initiatives to strengthen this potential. In addition, data show that few municipal health authorities across the country have adopted medical residency programs as a tool to drive quality PHC. It is noteworthy that this situation persists despite the efforts made to implement policies aimed at strengthening FCMRPs over the last 15 years.

FCMRPs should not be viewed as the only strategy for expanding primary care coverage across the country's differing social contexts. However, a deeper understanding of the FCMRP implementation process could help municipal health authorities to recognize the potential of these interventions, especially considering that they have been shown to be pathways that can form a virtuous circle.

In addition to the above, new questions need to answered to advance the training of the SUS workforce for PHC, for example: What are the barriers to the effective implementation of federal policies? Why do only some managers recognize the potential of medical residency programs for strengthening the health system? These questions are crucial to reviewing policies and paving pathways to expanding and strengthening FCMRPs, combined with increased take-up of positions in existing programs.

It is hoped that our findings will provide greater visibility to the role of municipal health managers in the training of the SUS workforce.

Collaborations

Study conception and design: APT Leite, AP Waquil, S Mai, VS Rosa, EAA Cordero and MEB Pinto. Data analysis: APT Leite, AP Waquil, TD Sarti, IB Correia, MEB Pinto, EAA Cordero, VS Rosa and S Mai. Data interpretation: APT Leite, IB Correia, PS Chueiri, TD Sarti, AG Jantsch, AP Waquil, S Mai, VS Rosa, EAA Cordero, DK Augusto, AF Lopes and MEB Pinto. Drafting of the manuscript: APT Leite, IB Correia, PS Chueiri, TD Sarti and AG Jantsch. Critical revision of the article: APT Leite, IB Correia, PS Chueiri, TD Sarti, AG Jantsch, AP Waquil, S Mai, VS Rosa, EAA Cordero, DK Augusto, AF Lopes, MEB Pinto. All authors approved the final version of this article and agree with the journal's copyright rules.

References

1. Sanders D, Nandi S, Labonté R, Vance C, Van Damme W. From primary health care to universal health coverage—one step forward and two steps back. *Lancet* 2019; 394(10199):619-621.
2. Hone T, Macinko J, Millett C. Revisiting Alma-Ata: what is the role of primary health care in achieving the Sustainable Development Goals? *Lancet* 2018; 392(10156):1461-1472.
3. Macinko J, Starfield B, Shi L. The contribution of primary care systems to health outcomes within Organization for Economic Cooperation and Development (OECD) countries, 1970-1998. *Health Serv Res* 2003; 38(3):831-865.
4. Giovanella L, Franco CM, Almeida PF. Política Nacional de Atenção Básica: para onde vamos? *Cien Saude Colet* 2020; 25(4):1475-1482.
5. Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q.* 2005; 83(3):457-502.
6. Brasil. Ministério da Saúde (MS). Portaria Interministerial nº 1.802, de 26 de agosto de 2008 Institui o Programa de Educação pelo Trabalho para a Saúde - PET - Saúde. *Diário Oficial da União* 2008; 26 ago.
7. Brasil. Casa Civil. Decreto nº 7.385, de 8 de dezembro de 2010. Institui o Sistema Universidade Aberta do Sistema Único de Saúde - UNA-SUS, e dá outras providências. *Diário Oficial da União* 2010; 8 dez.
8. Brasil. Ministério da Educação (MEC). Ministério da Saúde (MS). Portaria Interministerial nº 1.001, de 22 de outubro de 2009. Institui o Programa Nacional de Apoio à Formação de Médicos Especialistas em Áreas Estratégicas - PRÓ-RESIDÊNCIA. *Diário Oficial da União* 2009; 22 out.
9. Brasil. Ministério da Saúde (MS). Portaria Interministerial nº 2.087, de 1 de setembro de 2011. Institui o Programa de Valorização do Profissional da Atenção Básica. *Diário Oficial da União* 2011; 1 set.
10. Brasil. Lei nº 12.871, de 22 de outubro de 2013. Institui o Programa Mais Médicos, altera as Leis nº 8.745, de 9 de dezembro de 1993, e nº 6.932, de 7 de julho de 1981, e dá outras providências. *Diário Oficial da União* 2013; 23 out.
11. Brasil. Lei nº 13.958, de 18 de dezembro de 2019, Institui o Programa Médicos pelo Brasil, no âmbito da atenção primária à saúde no Sistema Único de Saúde (SUS), e autoriza o Poder Executivo federal a instituir serviço social autônomo denominado Agência para o Desenvolvimento da Atenção Primária à Saúde (Adaps). *Diário Oficial da União* 2019; 19 dez.
12. Oliveira APC, Gabriel M, Poz MRD, Dussault G. Desafios para assegurar a disponibilidade e acessibilidade à assistência médica no Sistema Único de Saúde. *Cien Saude Colet* 2017; 22(4):1165-1180.
13. Oliveira BLCA, Lima SF, Pereira MUL, Pereira Júnior GA. Evolução, distribuição e expansão dos cursos de medicina no Brasil (1808-2018). *Trab Educ Saude* 2019; 17(1):e0018317.
14. Scheffer M, coordenador. *Demografia Médica no Brasil 2020*. São Paulo: Departamento de Medicina Preventiva da Faculdade de Medicina da USP, Conselho Federal de Medicina; 2020.
15. Rodrigues PHA, Ney MS, Paiva CHA, Souza LMBM. Regulação do trabalho médico no Brasil: impactos na Estratégia Saúde da Família. *Physis* 2013; 23(4):1147-1166.
16. van der Leeuw RM, Lombarts KM, Arah OA, Heineman MJ. A systematic review of the effects of residency training on patient outcomes. *BMC Med* 2012; 10(1):65.
17. Simas KBF, Gomes AP, Simões PP, Augusto DK, Siqueira-Batista R. A residência de Medicina de Família e Comunidade no Brasil: Breve recorte histórico. *Rev Bras Med Fam Comunidade* 2018; 13(40):1-13.
18. Augusto DK, David L, Oliveira DOPS, Trindade TG, Lermen Junior N, Poli Neto P. Quantos médicos de família e comunidade temos no Brasil? *Rev Bras Med Fam Comunidade* 2018; 13(40):1-4.
19. Storti MMT, Oliveira FP, Xavier AL, Storti MMT, Oliveira FP, Xavier AL. A expansão de vagas de residência de Medicina de Família e Comunidade por municípios e o Programa Mais Médicos. *Interface (Botucatu)* 2017; 21(Supl. 1):1301-1314.
20. Soares RS, Oliveira FP, Neto AJM, Barreto DS, Carvalho ALB, Sampaio J, Figueiredo AM. Residência em medicina de família e comunidade: construindo redes de aprendizagens no SUS. *Rev Bras Med Fam Comunidade* 2018; 13(40):1-8.
21. Sarti TD, Fontenelle LF, Gusso GDF. Panorama da expansão dos programas de Residência Médica em Medicina de Família e Comunidade no Brasil: desafios para sua consolidação. *Bras Med Fam Comunidade* 2018; 13(40):1-5.
22. World Health Organization (WHO). *Global Strategy on Human Resources for Health: Workforce 2030*. Genebra: WHO; 2016.
23. Sales M, Kieny MP, Krech R, Etienne C. Human resources for universal health coverage: from evidence to policy and action. *Bull World Health Organ* 2013; 91(11):798A.
24. Oliveira FP, Vanni T, Pinto HA, Santos JTR, Figueiredo AM, Araújo SQ, Matos MFM, Cyrino EG. Mais Médicos: um Programa brasileiro em perspectiva internacional. *Interface (Botucatu)* 2015; 19(54):623-634.
25. Minayo MCS. *O desafio do conhecimento: pesquisa qualitativa em saúde*. 14ª ed. São Paulo: Hucitec; 2014.
26. Ouverney ALM, Carvalho ALB, Machado NMS, Moreira MR, Ribeiro JM. Gestores municipais do Sistema Único de Saúde: perfil e perspectivas para o Ciclo de Gestão 2017-2020. *Saude Debate* 2019; 43(esp. 7):75-91.
27. Brasil. Ministério da Saúde (MS). *Cadastro Nacional dos Estabelecimentos de Saúde do Brasil (CNES)* [Internet]. [acessado 2020 out 23]. Disponível em: http://tabnet.datasus.gov.br/cgi/deftohtm.exe?cnes/cnv/estabbr.def.
28. Brasil. Ministério da Saúde (MS). *Direm – Diretório das Escolas de Medicina* [Internet]. [acessado 2020 out 23]. Disponível em: https://direm.org/.
29. Rodrigues ET, Forster AC, Santos LL, Ferreira JBB, Falk JW, Fabbro ALD. Perfil e trajetória profissional dos egressos da Residência em Medicina de Família e Comunidade do Estado de São Paulo. *Rev Bras Educ Med* 2017; 41(4):604-614.

30. Barreto DS, Melo Neto AJ, Figueiredo AM, Sampaio J, Gomes LB, Soares RS. The More Doctors Program and Family and Community Medicine residencies: articulated strategies of expansion and interiorization of medical education. *Interface (Botucatu)* 2019; 23(Supl. 1):e180032.
31. Justino ALA, Oliver LL, Melo TP. Implantação do programa de residência em medicina de família e comunidade da secretaria municipal de saúde do rio de janeiro, Brasil. *Cien Saude Colet* 2016; 21(5):1471-1480.
32. Pinto LF, Giovanella L. Do Programa à Estratégia Saúde da Família: expansão do acesso e redução das internações por condições sensíveis à atenção básica (Icsab). *Cien Saude Colet* 2018; 23(6):1903-1914.
33. Andrade LR, Pinto ICM, Soares CLM, Silva VO. Provimento e fixação de médicos na atenção primária à saúde no estado da Bahia. *Rev Admin Publica* 2019; 53(3):505-519.
34. Ney MS, Rodrigues PHA. Fatores críticos para a fixação do médico na Estratégia Saúde da Família. *Physis* 2012; 22(4):1293-1311.
35. Ceccim RB. Educação permanente em saúde: desafio ambicioso e necessário. *Interface (Botucatu)* 2005; 9(16):161-177.
36. Arnemann CT. *Educação permanente em saúde no contexto da residência multiprofissional: estudo apreciativo crítico* [tese]. Porto Alegre: Universidade Federal do Rio Grande do Sul; 2017.
37. Wachelke J, Natividade J, Andrade A, Wolter R, Camargo B. Caracterização e avaliação de um procedimento de coleta de dados online (Corp). *Avaliaç Psicol* 2014; 13(1):143-146.

Article submitted 23/10/2020
Approved 10/02/2021
Final version submitted 12/02/2021

Chief editors: Maria Cecília de Souza Minayo, Romeu Gomes, Antônio Augusto Moura da Silva