

## Evaluation of the longitudinality between users and residency programs in Family and Community Medicine in a region of the municipality of Rio de Janeiro, Brazil

1

THEMATIC ARTICLE

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**Abstract** Primary Health Care (PHC) in Brazil has become stronger in recent decades, thus increasing the demand for workers in the area. Using a cross-sectional design (n=492), this study aimed to evaluate the longitudinal tie of adult users and their relationship with the Family and Community Medicine Residency Program (Programa de Residência em Medicina de Família e Comunidade - PRMFC) in a region of the municipality of Rio de Janeiro from the perspective of adult users. To this end, we used the reduced version of the Primary Care Assessment Tool (PCATool) questionnaire, combined with the extended version of the "longitudinality" attribute. This study was conducted in two family clinics, one participating in the PRMFC for over 10 years and the other non-participatory. The overall PHC score for the entire study population was 5.63 [4.56; 5.80]. Comparatively, the performance in the family clinic with PRMFC was higher (6.32 [6.12; 6.53]) than that with no residency program (4.94 [4.70; 5.19]). Regarding longitudinality, the former also obtained a higher score (7.02 [6.81; 7.23]) when compared to the latter (5.43 [5.17; 5.68]). The results of this study suggest to administrators that the PRMFC can be a useful tool for improving the quality of services through the qualification of Family Doctors and, thus, calls for investments in the area.

**Key words** Primary Health Care, Longitudinality, Health assessment, Rio de Janeiro

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## Introduction

Consolidated at an international conference held at Alma-Ata in 1978, Primary Health Care (PHC) is recognized as a model that provides broader and better access to health systems, and is a means through which to reorganize health-care systems throughout the world<sup>1</sup>. In universal healthcare systems, it is the first level of user access to health services, and should be able to care for the most common conditions and resolve most of the health demands of the population<sup>2</sup>.

To guide the organization of these services, Barbara Starfield defined a set of desirable characteristics for the evaluation of PHC services, along with its essential and derived attributes. Among these is longitudinality, which is the PHC characteristic of being the common source of care for the individual over time, with a relationship established with a doctor, team, or service that is sought when there is a need for care, and the maintenance of this relationship even when there are no immediate health needs. The maintenance of such a partnership is beneficial for the care provided to the users of a healthcare system<sup>3</sup>.

In Brazil, the implementation of the PHC began in the 1990's, after the proclamation of the 1988 Constitution and the creation of the Unified Health System (SUS)<sup>4</sup>. Complying with the organization of this system, the primary sector evolved in a decentralized manner throughout the country, with the municipal management of its planning, resulting in heterogeneous characteristics.

In the municipality of Rio de Janeiro, PHC was characterized by low expansion capacity of the Family Health Strategy (FHS) up to 2009, organized around health centers with specialized doctors<sup>5</sup> and with a coverage of only 3.5% by the FHS. In 2009, Medical Care Reforms in PHC (*Reforma dos Cuidados em Atenção Primária em Saúde* - RCAPS) were implemented, with a plan that facilitated the expansion of PHC services, prioritizing FHS as a model and promoting the administrative and organizational restructuring and reform of the very model of care. That initiative resulted in an expressive increase in population coverage by PHC at the municipal level, passing from the 3.5% coverage in December 2008 to 55% in 2015, as well as in the number of Family Health Teams (FHTs) created, from 128 in 2008 to 958 in 2016<sup>5</sup>.

The period from 2018 to 2020 was a time of setbacks for the model, with new adjustments in healthcare teams, with a decrease in the number

of health agents and a 35% decline in terms of FHTs. However, a new effort towards encouraging and expanding PHC was observed in 2021, after yet another change in management. According to data from the e-gestor AB site, regarding the history of PHC coverage, in October 2023, the municipality of Rio de Janeiro had 1,256 teams and a population coverage of nearly 82%.

An increase in PHC coverage led to a demand for more professionals in the area. To address the demand for medical professionals resulting from PHC expansion and to boost the qualification, maintenance, and attraction of professionals, in 2012, the Municipal Health Secretary of Rio de Janeiro (SMS-RJ) began the Family and Community Medicine Residency Program (*Programa de Residência em Medicina de Família e Comunidade* - PRMFC-Rio) with the purpose of providing qualification to health professionals working with the initiative, as well as strengthening other programs (UFRJ/Fiocruz and UERJ) which already existed in the municipality<sup>6</sup>.

Considering the relevance achieved by PHC in the Brazilian healthcare system since its creation, the debates regarding its resolutivity and efficiency have been furthered<sup>7</sup>. This encouraged the search for ways to evaluate the system, aimed at identifying strengths and weaknesses, and serving as a tool to help improve the management structure<sup>8</sup>. Among the available instruments, the Primary Care Assessment Tool (PCATool) is used by many countries worldwide. It has also been validated nationally, is capable of measuring the degree of orientation for PHC, and is applicable to professionals, managers, and users alike<sup>6</sup>.

The municipality of Rio de Janeiro is unique in the formulation of this service and has the largest Family and Community Health Residency Program in the country, generating 150 new positions each year, together with an active presence of the residents in the work processes within Family Clinics. Hence, there is a clear need to evaluate the quality of the PHC structures and processes as regards the training of these health professionals.

Evaluations of healthcare services in Rio de Janeiro are still few and far between, especially concerning medical residency. In the literature, two important evaluations were conducted by Harzheim in Rio de Janeiro, using the PCATool, both conducted ten years ago and are in need of updating: the first study, from 2013, used the professional version of the tool, showing better results for specialists in Family and Community Medicine (FCM)<sup>9</sup>; the other, from 2014, conduct-

ed with a large sample<sup>10</sup>. Medical residency was not considered in these studies.

Therefore, the current study aims to evaluate the dimension of the longitudinal connection and its relationship with residency in FCM as regards Planning Area 3.1 of the municipality of Rio de Janeiro, from the perspective of adult users. This study also aims to characterize the profile of the interviewees according to sex, age group, race/color of skin, marital status, and relationships with longitudinality, as well as examine the evaluation of the users by the PCATool in relation to the overall score obtained in each unit.

### Materials and methodology

A population survey was conducted, with adult users of two PHC facilities from Planning Area 3.1, in the municipality of Rio de Janeiro: Felipe Cardoso Family Clinic (CFFC) and Nilda Campos Family Clinic (CFNC). The criteria for inclusion was that the users had to have been registered at either family clinic and be 18 years of age or older.

The size of the simple random sample (SRS) was calculated to compare the degree of orientation towards PHC (overall score from 0 to 10), of the two family clinics. The calculations were conducted using a 95% confidence interval (95% CI), and a precision (d) of 6.5% of the estimates to be calculated, considering that, in addition to the scores of the questionnaire generated by the PCATool, there would be several other questions with frequencies (prevalence) that must also be calculated. Therefore, given the absence of recent previous studies, we considered the most adverse case to be when  $p=q=0.5$ <sup>11</sup>. Hence, the estimated size of the sample for each FC was 250 individuals, which already predicted an estimated 10% loss. After data collection, there were a total of 246 respondents for each family clinic.

The CFFC has 14 Family Health Strategy (FHS) teams and partnerships with medical residency, nursing, and multidisciplinary programs. All of its teams have been part of the PRMFC-Rio for approximately 10 years. At CFNC, there are eight FHS teams, and at the time of data collection, there were three teams that had general physicians with no specialization in FCM, who worked for 40 hours a week in those teams and for more than two years.

Data collection was conducted in the health facilities after the users had finished a doctor's appointment, in a reserved environment, from June

to August 2023. Four interns from the Family Health Internship of the Universidade Federal do Rio de Janeiro (UFRJ) worked in data collection, as did the author herself. The selected users were approached alternately after leaving an appointment. The PCATool-Brasil questionnaire was used, in a reduced version, transcribed into the KoboTool digital platform, which is free of access, and observing the rules described in the PCATool 2020 Manual. This 25-item version evaluated reproductivity and was safe to use<sup>12</sup>. The extensive version was used for longitudinality. It includes the items from the reduced version, but it also enables the calculation of the average of an attribute separately, in addition to the overall PHC score.

The answers were scored according to a Likert scale, with the following categories: for sure, yes; probably, yes; probably, not; for sure not; do not know/cannot remember. The PCATool scores are classified as High (score $\geq$ 6.6) and Low (score $<$ 6.6). When the average is higher or equal to 6.6, we may infer that there is the presence and extension of the PHC attributes, which represents better oriented PHC services<sup>13</sup>.

The questionnaire presented to the users sought to measure the longitudinality score separately and the overall PHC score for each unit. In addition to these items, we also analyzed the "affiliation" score, an item of the PCATool that assesses the identification with the health facility by the users, as being "their own". The scores were correlated with the clinics and with the user profile to determine key factors, such as sex, race, and marital status. These profiles and the clinics were then compared, considering the presence or not of medical residency. For the purpose of data analysis, the variable "age" was stratified in two groups, according to the median value (45 years of age).

This study was submitted to and approved by the Ethics and Research Committee of the ENSP/Fiocruz, logged under protocol no. 5,906,217 and of the Municipal Health Secretary of Rio de Janeiro, logged under protocol no. 6,008,838, respecting the ethical aspects involving research with humans and following Resolution CNS No. 466/2012 of the National Commission on Research Ethics (*Comissão Nacional de Ética em Pesquisa - CONEP*).

### Results

The results are described below according to the findings for each of the health facilities where

data collection was conducted. For the purpose of comparison, the population was characterized according to sociodemographic variables; the calculation was made for the overall PHC score according to the reduced version of the PCA-Tool-Brasil, and was longitudinally calculated for each of the facilities.

Of the 492 valid questionnaires, 246 collected at the CFFC, and 246 at the CFNC, eight were considered as invalid due to the score's calculation, as the answer "I don't know/I do not remember" was chosen in more than 50% of the answers or because the data presented was incomplete ("missing"). According to the instrument manual's recommendations, this would render the final average unfeasible.

As regards sociodemographic data (data not tabulated), there was a predominance of the female sex among the interviewees in both facilities, with a total of 192 women (78.05%) and 54 men (21.95%) at the CFFC and 178 women (72.36%) and 68 men (27.64%) at the CFNC. In terms of age brackets, we found 130 patients, aged 45 years and younger (52.85%), at the CFFC, and 119 users, aged 45 years and younger (48.97%) at the CFNC. When asked about which skin color/race they identified themselves with, 174 (70.73%) at the CFFC and 170 (69.11%) at the CFNC identified themselves as brown/black. Concerning the marital status of the participants, 47.56% at the CFFC were married, as compared to 44.9% at the CFNC.

#### **Evaluation of healthcare services in the perspective of adult users**

Regarding the application of the PCATool, the average overall PHC score was 5.63 [5.46; 5.80]; of longitudinality, 6.22 [6.04; 6.40]; and of affiliation, 7.63 [7.37; 7.89]. When considered separately, at the CFFC, the overall PHC score could be calculated for 243 users, with a 6.32 average [6.12; 6.53]. The longitudinality score was calculated for 245 users, with a 7.02 average [6.81; 7.23]. The affiliation average was 7.87 [7.52; 8.23]. At the CFNC, the overall score had an average of 4.94 [4.70; 5.19]. The average longitudinality score was 5.43 [5.17; 5.68]. Finally, the affiliation score had an average of 7.38 [7.02; 7.51] (Table 1).

When the scores were correlated according to sex, we noticed a lower score given by males, in the overall score (6.40 [6.16; 6.36]), in longitudinality (7.08 [6.83; 7.32]), and in the affiliation to CFFC (8.06 [7.67; 8.44]). The estimates for the females, by contrast, were, respectively, 6.06 [5.66;

6.47]; 6.81 [6.38; 7.26]; and 7.22 [6.40; 8.05]. The same relationship was not observed at the CFNC, which showed an even higher evaluation by males for longitudinality and the overall PHC score. In that facility, for females, we obtained a overall score of 4.85 [4.56; 5.14]; 5.35 for longitudinality [5.05; 5.66]; and 7.57 [7.16; 7.97] for affiliation. The averages for the male public were 5.18 [4.71; 5.65]; 5.26 [5.16; 6.08]; and 6.91 [6.11; 7.72], respectively (Table 2).

In relation to age groups, a better evaluation was found among users over 45 years of age, interviewed at both clinics. The overall PHC score was 6.00 [5.7; 6.29]; the longitudinality, 6.73 [4.42; 7.04]; and the affiliation, 7.20 [6.71; 7.74] for interviewees aged 56 years and younger at the CFFC. For individuals over 45 years, at the same facility, the average score was 6.67 [6.38; 6.96]; longitudinality, 7.35 [7.06; 7.63], and affiliation, 8.62 [8.20; 9.04]. At the CFNC, the averages for users, aged 45 years and younger, were 4.83 [4.46; 5.19]; 5.12 [4.73; 5.51]; and 7.25 [6.71; 7.80], respectively. Among interviewees over 45 years of age, the scores were 5.05 [4.72; 5.38]; 5.72 [5.39; 6.05]; and 7.5 [7.01; 8.00], respectively (Table 3).

When the interviewees' skin color was correlated with the final score, the average overall PHC, longitudinality, and the affiliation scores, for people who self-reported themselves to be white, indigenous, or yellow, was 6.49 [6.15; 6.84]; 7.19 [6.86; 7.52]; and 8.29 [7.75; 8.83], respectively, while among those who self-reported themselves to be brown/black, the scores were 6.25 [6.00; 6.51]; 6.95 [6.68; 7.22]; and 7.70 [7.26; 8.15], respectively. At the CFNC, in the same order, the averages for those who self-reported themselves to be white/indigenous/yellow were 4.80 [4.38; 5.23]; 5.21 [4.75; 5.67]; and 7.76 [7.11; 8.41], respectively, while those who self-reported themselves to be brown/black were 5.05 [4.72; 5.38]; 5.72 [5.39; 6.05]; and 7.50 [7.01; 8.00], respectively (Table 4).

Regarding the variable "marital status", at the CFFC, the averages for overall, longitudinality, and affiliation scores for users who have a spouse were 6.32 [6.04; 6.61]; 7.05 [6.74; 7.35]; and 7.58 [7.06; 8.10], respectively. For those who are separated/widowed, these scores were 6.31 [5.97; 6.64]; 6.95 [6.60; 7.30]; and 8.10 [7.56; 8.64], respectively, for single individuals, the averages were 6.39 [5.72; 7.06]; 7.17 [6.56; 7.78]; and 8.28 [7.12; 9.43], respectively. At the CFNC, the patients who were married/in a stable union had averages of 4.86 [4.50; 5.23]; 5.31 [4.93; 5.69]; and 7.30 [6.75; 7.85], respectively, for the over-

**Table 1.** Average scores (95%CI) of the characteristics and attributes of Primary Health Care (PHC) according to adult users of the Felipe Cardoso and Nilda Campos Family Clinics. Municipality of Rio de Janeiro. June to August 2023.

Characteristics and attributes of Primary Health Care	Overall		CFFC - with residency in FCM		CFNC - without residency in FCM		p-value (*)
	n	Average (95%CI)	n	Average (95%CI)	n	Average (95%CI)	
Affiliation	492	7.63 [7.37; 7.89]	246	7.87 [7.52; 8.23]	246	7.38 [7.02; 7.51]	<0.0001
Longitudinality	491	6.22 [6.04; 6.40]	245	7.02 [6.81; 7.23]	246	5.43 [5.17; 5.68]	<0.0001
Overall score	488	5.63 [5.46; 5.80]	243	6.32 [6.12; 6.53]	245	4.94 [4.70; 5.1]	<0.0001

Key: CFFC = Felipe Cardoso Family Clinic (unit with residency program in FCM). CFNC = Nilda Campos Family Clinic (unit with no residency program); # Scores range from 0 to 10; CI: Confidence interval; (\*) Association with t test for two independent samples.

Source: Field work conducted at the CFFC and CFNC Family Health Clinics from the municipality of Rio de Janeiro, between June and August 2023.

**Table 2.** Average overall (95%CI), longitudinality, and affiliation scores, according to sex, in Primary Health Care (PHC) from the perspective of the adult users of the Felipe Cardoso and Nilda Campos Family Clinics. Municipality of Rio de Janeiro, June to August 2023

Sex	Characteristics and attributes of PHC	CFFC - with residency in CFM		CFNC - without residency in CFM		Total		p-value (*)
		n	Average (95%CI)	n	Average (95%CI)	n	Average	
Female	Affiliation	192	8.06 [7.67;8.45]	178	7.57 [7.16;7.97]	370	7.82 [7.54;8.10]	<0.0001
	Longitudinality	191	7.08 [6.83;7.32]	178	5.35 [5.05;5.66]	369	6.25 [6.03;6.46]	<0.0001
	Overall score	189	6.40 [6.16;6.64]	177	4.85 [4.56;5.14]	366	5.65 [5.45;5.85]	<0.0001
Male	Affiliation	54	7.22 [6.40;8.05]	68	6.91 [6.11;7.72]	122	7.05 [6.48;7.62]	<0.0001
	Longitudinality	54	6.82 [6.37;7.27]	68	5.63 [5.16;6.09]	122	6.15 [5.82;6.49]	<0.0001
	Overall score	54	6.06 [5.66;6.47]	68	5.18 [4.71;5.65]	122	5.57 [5.25;5.89]	<0.0001
Total	Affiliation	246	7.87 [7.52;8.23]	246	7.38 [7.02;7.51]	492	7.63 [7.37;7.89]	<0.0001
	Longitudinality	245	7.02 [6.81;7.23]	246	5.43 [5.17;5.68]	491	6.22 [6.04;6.40]	<0.0001
	Overall score	243	6.32 [6.12;6.53]	245	4.94 [4.70;5.10]	488	5.63 [5.46;5.80]	<0.0001

Key: CFFC = Felipe Cardoso Family Clinic (unit with residency program in CFM). CFNC = Nilda Campos Family Clinic (unit with no residency program); # Scores range from 0 to 10; CI: Confidence interval; (\*) Association with t test for two independent samples.

Source: Field work conducted at the CFFC and the CFNC Family Health Clinics from the municipality of Rio de Janeiro, between June and August 2023.

all PHC, longitudinality, and affiliation scores. For the widowed/separated, the scores were 5.02 [4.63; 5.42]; 5.48 [5.07; 5.89]; and 7.39 [6.77; 8.01], respectively, for the same items and order mentioned above. Finally, those who were single showed the following averages: 4.98 [4.34; 5.61]; 5.62 [4.95; 6.29]; and 7.60 [6.75; 8.44] (Table 5).

## Discussion

This study evaluated and compared longitudinality and the overall PHC score in the perspective of the users of two facilities from a region of Rio

de Janeiro - one with teams of medical residency from PRMFC-Rio and another, with professionals that do not have this tie. The results showed a positive relationship between the presence of PRMFC-Rio and the presence and extension of longitudinality and other attributes, with better evaluations given by users of that facility.

Evaluation in health can perform a strategic role in the improvement of the quality of healthcare services, as well as in the reduction of inequalities and in guidance for public policies. However, the evaluation process still has not been incorporated into the healthcare systems in Brazil due to the hurdles that are inherent to this

**Table 3.** Average overall (95%CI), longitudinality, and affiliation scores according to age group in Primary Health Care (PHC) in the perspective of the adult users of the Felipe Cardoso and Nilda Campos Family Clinics. Municipality of Rio de Janeiro, June to August 2023.

Age Group	Characteristics and attributes of PHC	CFFC - with residency in FCM		CFFC - without residency in FCM		Total		p-value (*)
		n	Average (95%CI)	n	Average (95%CI)	n	Average	
45 years of age and younger	Affiliation	130	7.21 [6.67; 7.74]	119	7.25 [6.71; 7.80]	249	7.23 [6.85; 7.61]	0.8978
	Longitudinality	129	6.73 [6.42; 7.04]	119	5.12 [4.73; 5.51]	248	5.96 [5.70; 6.22]	<0.0001
	Overall score	127	6.01 [5.73; 6.30]	119	4.83 [4.46; 5.20]	246	5.44 [5.20; 5.68]	<0.0001
Over 45 years of age	Affiliation	116	8.62 [8.20; 9.04]	127	7.50 [7.01; 8.00]	243	8.04 [7.70; 8.37]	<0.0001
	Longitudinality	116	7.35 [7.06; 7.63]	127	5.72 [5.39; 6.05]	243	6.50 [6.25; 6.74]	<0.0001
	Overall score	116	6.67 [6.38; 6.96]	126	5.05 [4.72; 5.38]	242	5.82 [5.58; 6.06]	<0.0001
Total	Affiliation	246	7.87 [7.52; 8.23]	246	7.38 [7.02; 7.51]	492	7.63 [7.37; 7.89]	<0.0001
	Longitudinality	245	7.02 [6.81; 7.23]	246	5.43 [5.17; 5.68]	491	6.22 [6.04; 6.40]	<0.0001
	Overall score	243	6.32 [6.12; 6.53]	245	4.94 [4.70; 5.10]	488	5.63 [5.46; 5.80]	<0.0001

Key: CFFC = Felipe Cardoso Family Clinic (unit with residency program in CFM). CFNC = Nilda Campos Family Clinic (unit with no residency program); # Scores range from 0 to 10; CI: Confidence interval; (\*) Association with t test for two independent samples.

Source: Field work conducted at the CFFC and the CFNC Family Health Clinics from the municipality of Rio de Janeiro, between June and August 2023.

**Table 4.** Average overall (95%CI), longitudinality, and affiliation scores according to race/skin color and affiliation by race/skin color in Primary Health Care (PHC) in the perspective of the adult users of the Felipe Cardoso and Nilda Campos Family Clinics. Municipality of Rio de Janeiro, June to August 2023.

Race/skin color	Characteristics and attributes of PHC	CFFC - with residency in FCM		CFFC - without residency in FCM		Total		p-value (*)
		n	Average (95%CI)	n	Average (95%CI)	n	Average	
White/Yellow/Indigenous	Affiliation	72	8.29 [7.75; 8.83]	76	7.76 [7.11; 8.41]	148	8.01 [7.59; 8.44]	0.2223
	Longitudinality	72	7.19 [6.86; 7.52]	76	5.21 [4.75; 5.67]	148	6.17 [5.85; 6.50]	<0.0001
	Overall score	71	6.49 [6.15; 6.84]	76	4.80 [4.38; 5.23]	147	5.62 [5.31; 5.93]	<0.0001
Light-skinned black/Dark-skinned black	Affiliation	174	7.70 [7.26; 8.15]	170	7.22 [6.77; 7.66]	344	7.46 [7.15; 7.78]	0.1299
	Longitudinality	173	6.95 [6.68; 7.22]	170	5.53 [5.22; 5.83]	343	6.24 [6.03; 6.46]	<0.0001
	Overall score	172	6.25 [6.00; 6.51]	169	5.01 [4.70; 5.31]	341	5.63 [5.43; 5.84]	<0.0001
Total	Affiliation	246	7.87 [7.52; 8.23]	246	7.38 [7.02; 7.51]	492	7.63 [7.37; 7.89]	<0.0001
	Longitudinality	245	7.02 [6.81; 7.23]	246	5.43 [5.17; 5.68]	491	6.22 [6.04; 6.40]	<0.0001
	Overall score	243	6.32 [6.12; 6.53]	245	4.94 [4.70; 5.10]	488	5.63 [5.46; 5.80]	<0.0001

Key: CFFC = Felipe Cardoso Family Clinic (unit with residency program in CFM). CFNC = Nilda Campos Family Clinic (unit with no residency program); # Scores range from 0 to 10; CI: Confidence interval; (\*) Association with t test for two independent samples.

Source: Field work conducted at the CFFC and the CFNC Family Health Clinics from the municipality of Rio de Janeiro, between June and August 2023.

practice, such as a scarcity of resources, fragmentation of the healthcare system, and the lack of integration between the different levels of healthcare<sup>14</sup>.

The tool chosen for this study has been used more often in Brazil, perhaps because of its easy reproduction, understanding, and low cost<sup>15</sup>. I

was also adopted by the IBGE in 2019, with the support of the Department for Primary Health Care (PHC) of the Ministry of Health, in the National Health Survey (NHS)<sup>16</sup>.

The analysis of the sociodemographic profile aids in understanding the characteristics and needs of the population, identifying barriers for

**Table 5.** Average overall (95%CI), longitudinality, and affiliation scores according to marital status in Primary Health Care (PHC) in the perspective of the adult users of the Felipe Cardoso and Nilda Campos Family Clinics. Municipality of Rio de Janeiro, June to August 2023.

Marital Status	Characteristics and attributes of PHC	CFFC - with residency in FCM		CFFC - without residency in FCM		Total		p-value (*)
		n	Average (95%CI)	n	Average (95%CI)	n	Average	
Yes	Affiliation	117	7.58 [7.06;8.10]	111	7.30 [6.75;7.85]	228	7.44 [7.07;7.82]	0.4616
	Longitudinality	117	7.05 [6.74;7.35]	111	5.31 [4.93;5.69]	227	6.20 [5.92;6.46]	<0.0001
	Overall score	115	6.32 [6.04;6.61]	111	4.86 [4.50;5.23]	226	5.60 [5.36;5.85]	<0.0001
No, but lived previously	Affiliation	100	8.10 [7.56;8.64]	92	7.39 [6.77;8.01]	192	7.76 [7.35;8.17]	0.0883
	Longitudinality	100	6.95 [6.60;7.30]	92	5.48 [5.07;5.89]	192	6.25 [5.96;6.53]	<0.0001
	Overall score	100	6.31 [5.97;6.64]	91	5.02 [4.63;5.42]	191	5.69 [5.42;5.97]	<0.0001
Never lived	Affiliation	29	8.28 [7.12;9.43]	43	7.60 [6.75;8.44]	72	7.87 [7.20;8.54]	0.3282
	Longitudinality	29	7.17 [6.56;7.78]	43	5.62 [4.95;6.29]	72	6.24 [5.75;6.73]	0.0016
	Overall score	28	6.39 [5.72;7.06]	43	4.98 [4.34;5.61]	71	5.53 [5.05;6.01]	0.0037
Total	Affiliation	246	7.87 [7.52;8.23]	246	7.38 [7.02;7.51]	492	7.63 [7.37; 7.89]	<0.0001
	Longitudinality	245	7.02 [6.81;7.23]	246	5.43 [5.17;5.68]	491	6.22 [6.04; 6.40]	<0.0001
	Overall score	243	6.32 [6.12;6.53]	245	4.94 [4.70;5.10]	488	5.63 [5.46; 5.80]	<0.0001

Key: CFFC = Felipe Cardoso Family Clinic (unit with residency program in CFM). CFNC = Nilda Campos Family Clinic (unit with no residency program); # Scores range from 0 to 10; CI: Confidence interval; (\*) Association with t test for two independent samples.

Source: Field work conducted at the CFFC and the CFNC Family Health Clinics, from the municipality of Rio de Janeiro, between June and August 2023.

access and inequalities in health. Among the participants of this study, most were females; brown or black; and single, separated, and/or widowed. This profile is similar to that found in a study conducted in Rio de Janeiro in 2014, in which interviewed adults were mostly females, other than white, with an age average of 46.96 years, with average of 2.62 children per adult, and mostly single/widowed/separated/divorced<sup>10</sup>.

We can also see parallels with the study conducted by the IBGE, which, for the first time, included a module for PHC evaluation in its population survey. Although it is impossible to isolate the profile of the population of the municipality of Rio de Janeiro in the results from that study, when compared to the Southeast region of the country, we find a population with a similar profile, in which 69.59% of the participants were female, 56.33% were brown or black, 37.79% had no spouse, and 54.53% received up to one minimum salary of income<sup>16</sup>.

The similarity in the profiles of the studies indicates lack of use of the facilities by males and the younger population, and a greater access by brown/black women to these facilities, which represents a sign for administrators to enhance policies aimed at that group. One hypothesis for this

profile may be related to cultural aspects regarding health care, as well as the social role of the male and the relationship with the idea of fragility<sup>17</sup>.

The average overall PHC scores obtained in the present study are similar to what was found by a study conducted in 2014 in Rio de Janeiro, in which 3,530 adults participated in the survey and answered the PCATool questionnaire, resulting in an overall score of 5.73 [5.60; 5.84], an affiliation score of 7.05 [6.83; 7.27], and a longitudinality score of 6.27 [6.1; 6.40] in the municipality of Rio de Janeiro. More specifically, in CAP 3.1, the overall score was 6.0 [5.7; 6.29], the longitudinality score was 7.46 [6.91; 8.00], and the affiliation score was 6.26 [5.9; 6.6]<sup>10</sup>. Likewise, another study conducted in 2019 by the IBGE, obtained an average overall score for RJ of 5.3 [5.6; 5.9] and for the Southeast region of 5.8 [5.7; 6.0]<sup>16</sup>.

We can therefore conclude that, when comparing the two facilities, that which has a medical residency program showed high scores for affiliation and longitudinality and an overall score that was higher than the facility with no medical residency program, even though it did not reach the cutoff for configuring the presence and extension of PHC attributes. This may well be a consequence of the policies from the previous admin-

istration, which expressively reduced the FHC teams. Hence, we are now in a period in which dismantled health services need to be recovered.

Data indicates that there is improvement in quality of care when teams have medical residents, with better overall evaluations, which is also true for longitudinality, when compared to teams that have no FCM specialists. The higher evaluation of the “longitudinality” attribute for teams with residency programs indicates that longitudinal connections are being established regardless of the PRMFC-Rio, with the persistent presence of preceptors in the teams, who are professionals qualified to supervise the development of FCM capabilities.

It is important to mention, however, that even though the users were approached for interviews in a random manner, after leaving their medical appointments, the study had, as a limitation, the fact that it involved only the users who attend the facilities, while it does not include all of the people registered in the area. This can result in bias in the final results when they are extrapolated for the entire population.

The FHS proposal, as the main model of PHC, requires specialized professionals who are knowledgeable about the attributes designed by Starfield, and who have a more integral and reflexive view focused on the individual<sup>18</sup>. In 2013, a study was conducted in Rio de Janeiro focused on the implementation of the family clinics, which included the application of the PCATool, Health Professionals version. This tool classified the doctors as specialists (with residency or specialization in FCM/Family Health), or not, thus resulting in a difference in the average scores of the results, with higher scores for the medical specialists<sup>9</sup>.

Besides the association between more effectiveness of PHC and the presence of specialized doctors in the area, longitudinality and the establishment of longitudinal connections are directly related to the number of years worked by the health professionals, and to the establishment of a relationship between the professionals and the users. Many studies indicated that medical residency favors the maintenance of professionals in the places where they were trained<sup>19</sup>. Longitudinal connections allow the professionals or the teams to get to know the users in a more complete manner, building a relationship with more trust, and in so doing, achieving better resolutions to the problems that might be presented<sup>18</sup>.

When comparing the results of this study with other experiences of user evaluations con-

ducted in different municipalities, we found results close to those presented herein, such as in the case of the study conducted in 2014 in Minas Gerais, with an overall score of 5.92<sup>20</sup>; a study in Fortaleza in 2019, with an overall score of 5.7 and of 6.40 for longitudinality<sup>21</sup>; another conducted in Campo Grande, Mato Grosso do Sul (2020), with an overall score of 5.5 and of 7.2 for longitudinality, considering that this final study was high in comparison to the units with no residency programs identified in the present study<sup>22</sup>.

Although comparative analyses are productive and aid in decision-making, by observing other realities, it is important to reiterate the diversity of our country and its continental dimensions, which justifies the identification of diverging results in different municipalities.

## Final considerations

The residents of PRMFC-Rio are hosted at family clinics, under the supervision of preceptors who are family doctors, with closely supervised preceptory during the two years of training for the service. A strong preceptory, with professionals who are qualified in the field and with set contracts that allow them to stay for two years in the teams, facilitates the development of PHC attributes, including longitudinal connections.

The present study used the PCATool, in a reduced version for adult users, with a complete application of the longitudinality component, and observed that clinics with residency programs in FCM were evaluated well by the users. The longitudinality component obtained a 7.02 score, considered high according to the PCATool, in contrast with the clinic without the PRMFC-Rio, which presented an average of 5.43. The overall score showed expressive differences, with a 6.32 average in the former and a 4.94 score in the latter. Hence, we were able to establish relationships between the presence of PRMFC-Rio and the satisfaction of the users with the health service.

This study is relevant, especially considering the growing demand for evaluation processes which may aid administrators to make the necessary adjustments in order to expand PHC in Rio de Janeiro, as well as for the ongoing improvement in work processes and in the care provided by PHC. This study's findings reinforce the importance of investment in residency programs and in the specialization of PHC professionals in order to improve the quality of PHC in Rio de Janeiro.



The reduced version of the PCATool constitutes a partial limitation of the study, since it is impossible to detail the contribution of each attribute to the final score. Hence, we chose to include the more complete attribute “longitudinality” in the approach. However, considering its easy replication, the reduced version serves as a timely tool, and may be applied in a more regular manner, mainly in scenarios of limited human resources, as well as financial resources and available time.

The use of this tool, whether in its extended or reduced format, allows for evaluations in a more accessible and affordable manner, and makes it possible to identify the presence and extension of

PHC attributes over time, through the carrying out of evaluation surveys in series. There is a need for further studies on the theme, with studies conducted in other realities, exploring other attributes and considering the role of residency programs in relation to clinical outcomes. In so doing, these new studies may well help to improve the health care provided to the population in general.

The results of the present study revealed a positive evaluation of the longitudinal connections related to residency programs in FCM in the municipality of Rio de Janeiro, and this indicates a better performance of this attribute and potential to provide better care for all users within this context.

## Collaborations

EPB Bastos and LF Pinto participated together in all stages of the article's preparation and final review.

## References

1. Mendes EV. *A Construção Social da Atenção Primária à Saúde*. Brasília: CONASS; 2015.
2. Pereira IB, Lima JCF. *Dicionário da Educação Profissional em Saúde*. 2ª ed. rev. ampl. Rio de Janeiro: EPSJV; 2008.
3. Starfield B. *Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia. Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia*. Brasília: ONU/MS; 2002.
4. Fausto MCR, Matta GC. Atenção Primária à Saúde: histórico e perspectivas. In: Morosini MVGC, Corbo ADA, organizadores. *Modelos de atenção e a saúde da família*. Rio de Janeiro: ESPJV/Fiocruz; 2007. p. 43-67.
5. Melo EA, Mendonça MHM, Teixeira M. A crise econômica e a atenção primária à saúde no SUS da cidade do Rio de Janeiro, Brasil. *Cien Saude Colet* 2019; 24(12):4593-4598.
6. Soranz D, Pinto LF, Penna GO. Eixos e a Reforma dos Cuidados em Atenção Primária em Saúde (RCAPS) na cidade do Rio de Janeiro, Brasil. *Cien Saude Colet* 2016; 21(5):1327-1338.
7. Ribeiro LA, Scatena JH. A avaliação da atenção primária à saúde no contexto brasileiro: uma análise da produção científica entre 2007 e 2017. *Saude Soc* 2019; 28(2):95-110.
8. Almeida DB, Melo CMM. Avaliação na Atenção Básica em Saúde: uma Revisão de Literatura. *Rev Baiana Enferm* 2010; 24(1,2,3):[s.p.].
9. Harzheim E. *Reforma da Atenção Primária à Saúde na cidade do Rio de Janeiro: avaliação dos três anos de Clínicas da Família. Pesquisa avaliativa sobre aspectos de implantação, estrutura, processo e resultados das Clínicas da Família na cidade do Rio de Janeiro*. Porto Alegre: OPAS; 2013.

10. Harzheim E, Pinto LF, Hauser L, Soranz D. Avaliação dos usuários crianças e adultos quanto ao grau de orientação para Atenção Primária à Saúde na cidade do Rio de Janeiro, Brasil. *Cien Saude Colet* 2016; 21(5):1399-1408.
11. Silva NN. *Amostragem Probabilística*. São Paulo: EDUSP; 2001.
12. Oliveira MMC, Harzheim E, Riboldi J, Duncan BB. PCATool-ADULTO-BRASIL: uma versão reduzida. *Rev Bras Med Familia Comunidade* 2013; 8(29):256-263.
13. Brasil. Ministério da Saúde (MS). *Manual do Instrumento de Avaliação da Atenção Primária à Saúde. Manual do Instrumento de Avaliação da Atenção Primária à Saúde*. Brasília: MS; 2020.
14. Akerman M, Furtado JP. Práticas de avaliação em saúde no Brasil - diálogos. Porto Alegre: Editora Rede UNIDA; 2016.
15. Maia LG. *Avaliação da atenção primária pelos profissionais de saúde*. Goiânia: UFG; 2017.
16. Pinto LF, Quesada LA, D'Avila OP, Hauser L, Gonçalves MR, Harzheim E. Primary Care Assessment Tool: diferenças regionais a partir da Pesquisa Nacional de Saúde do Instituto Brasileiro de Geografia e Estatística. *Cien Saude Colet* 2021; 26(9):3965-3979.
17. Levorato CD, Mello LM, Silva AS, Nunes AA. Fatores associados à procura por serviços de saúde numa perspectiva relacional de gênero. *Cien Saude Colet* 2014; 19(4):1263-1274.
18. Costa APB, Guerra MR, Leite ICG. Avaliação dos atributos da atenção primária à saúde sob a ótica dos profissionais médicos. *Rev Bras Med Familia Comunidade* 2022; 17(44):3085-3085.
19. Berger CB, Dallegre D, Castro Filho ED, Pekelman R. A formação na modalidade Residência Médica: contribuições para a qualificação e provimento médico no Brasil. *Rev Bras Med Familia Comunidade* 2017; 12(39):1-10.
20. Silva SAD. *Avaliação dos atributos da atenção primária à saúde na estratégia saúde da família em municípios do sul de Minas Gerais* [tese]. São Paulo: Universidade de São Paulo; 2014.
21. Costa LB, Mota MV, Porto MMA, Fernandes CSGV, Santos ET, Oliveira JPM, Mota TC, Porto ALS, Alencar MNA. Avaliação da qualidade da Atenção Primária à Saúde em Fortaleza, Brasil, na perspectiva dos usuários adultos no ano de 2019. *Cien Saude Colet* 2021; 26(6):2083-2096.
22. Pinto LF, Soranz D, organizadores. *Relatório final de Pesquisa PCATool Campo Grande MS - 2020. Pesquisa "Presença e extensão dos atributos da Atenção Primária à Saúde desde a experiência dos usuários adultos nos serviços públicos no município de Campo Grande Mato Grosso do Sul"*. Campo Grande: LAB INOVA APS, CEE/Fiocruz; 2020.

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