

Evaluation of Primary Health Care in Rio de Janeiro, Brazil: the experience of patients fifteen years after the Reform

Otávio Pereira D'Avila <https://orcid.org/0000-0003-1852-7858>¹; Luiz Alexandre Chisini <https://orcid.org/0000-0002-3695-0361>¹; Mauro Cardoso Ribeiro <https://orcid.org/0009-0004-6146-9301>¹; Vinicius Siqueira Tavares Meira-Silva <https://orcid.org/0000-0002-3271-0811>^{2,6}; Yann Rodrigues Mathuiy <https://orcid.org/0000-0002-4038-9984>³; Luana Jonata Nunes de Moura <https://orcid.org/0000-0002-2021-1759>⁴; Erno Harzheim <https://orcid.org/0000-0002-8919-7916>⁵; Luiz Felipe Pinto <http://orcid.org/0000-0002-9888-606X>⁶

Abstract *The present study aimed to assess the degree of orientation for PHC from the perspective of adult and child users in the city of Rio de Janeiro. The design was a cross-sectional observational study and included independent samples of child and adult users leaving medical appointments at different health units in Rio de Janeiro (RJ). The study outcome was the essential and general scores of the PCATool Brazil, categorized as High Score above 6.6 and Low Score below 6.6. Socioeconomic, health-related, service use, and general characteristic variables were also collected. A total of 889 adults and 956 children answered the questionnaire and were analyzed. The core and overall PCATool scores were slightly higher in children than in the adult sample. The overall score was 6.72, 95%CI (6.63-6.81) and 6.40, 95%CI (6.30-6.50) in adults. In the adjusted models, individuals with five or more consultations in the last year: children - (OR=1.33, 95%CI [1.01-1.75])/adults - (OR=2.63, 95%CI [1.68-4.11]) and consultation with the same doctor: children - (OR=2.34, 95%CI [1.77-3.08])/adults - (OR=3.42, 95%CI [2.19-5.32]) were associated with a higher overall score.*

Key words Primary Health Care, Health Evaluation, Rio de Janeiro

¹ Programa de Pós-Graduação em Odontologia, Universidade Federal de Pelotas. R. Gonçalves Chaves 457, Centro. 96015-560 Pelotas RS Brasil. otaviopereiradavila@gmail.com

² Faculdade de Medicina, Instituto de Educação Médica, Universidade Estácio de Sá. Rio de Janeiro RJ Brasil.

³ Secretaria Municipal de Saúde do Rio de Janeiro RJ Brasil.

⁴ Especialização em Gestão em Saúde, Universidade Federal do Rio Grande do Sul. Porto Alegre RS Brasil.

⁵ Programa de Pós-Graduação em Epidemiologia, Universidade Federal do Rio Grande do Sul. Porto Alegre RS Brasil.

⁶ Faculdade de Medicina, Universidade Federal do Rio de Janeiro. Rio de Janeiro RJ Brasil.

Introduction

Health systems organized around Primary Health Care (PHC) have proven to be more equitable, efficient, sustainable, and better for the population's overall health. The stronger the presence of their essential attributes (first contact access, longitudinality, comprehensiveness, coordination) and derivatives (family and community guidance, cultural competence) in the user experience, the greater the likelihood that the PHC objectives will be achieved, as demonstrated by Starfield *et al.*¹ and Shi². Health systems structured around quality PHC offer better health and financial results³, which then encourages them to invest in and qualify their PHC models to strengthen their attributes⁴. Despite the clear advances regarding the expansion of PHC services in Brazil, the challenge remains to address heterogeneous quality, limited resolution, low technological incorporation, and the virtual absence of care coordination mechanisms, combined with difficult access to PHC⁵.

Fifteen years ago, the government of Rio de Janeiro began a reform of the municipal health network, prioritizing the increase in PHC coverage by expanding the Family Health Strategy (FHS) through contracts with social organizations. This expansion represented an increase in FHS coverage from 3.5% (2008) of the population to 70% (2025), which was accompanied by an increase in the number of procedures of around 535.4%. This expanded access and production was complemented by opening family clinics (FCs), adopting a broad portfolio of services and clinical protocols, and implementing a medical and multidisciplinary residency program, which helped to qualify the network⁶.

The Primary Care Assessment Tool (PCATool)⁷ was developed to assess PHC services and is one of the most widely used tools. Over the past two decades, the PCATool has been adapted and validated for various national contexts, becoming a widely recognized research instrument on all continents^{8–11}. This allows for an important scenario of comparability. The official version of the instrument for users (aged 0 to 12) in Brazil was validated in 2006¹² and later incorporated into the Ministry of Health's PHC Assessment Manual¹³. It was updated in 2020 with a revised set of instruments that make up the "PCATool family", incorporating new versions and occasionally updating the wording of

some items¹⁴. Over the past few decades, several PHC assessment studies using the PCATool have been published in Brazil and around the world, allowing for a scenario of comparability.

More specifically, in Rio de Janeiro, in 2014, when assessing the presence and extent of PHC attributes in the experience of adult and child users, using the PCATool – Brazil, child users evaluated PHC services better than adults. The attribute "access–first contact/accessibility" was the most unfavorable, and "community guidance" and "family guidance" revealed attributes of lesser importance¹⁵.

Although the expansion of PHC in Rio de Janeiro has been significant, gaps remain in knowledge about the quality of services and user experience, especially after the PHC reform was implemented. Expanding the FHS teams and opening FCs represented significant progress. Thus, evaluating services is essential to identifying strengths and weaknesses, and to directing future actions. The PCATool, an internationally recognized tool for evaluating PHC, allows for comparison of user experiences from different contexts. Considering the magnitude of the reform implemented in Rio de Janeiro and the importance of evaluating its results, this study aimed to examine the degree of orientation for PHC from the perspective of adult and child users in the city of Rio de Janeiro.

Method

Study design

This work follows a cross-sectional survey study design, with independent random samples of users (children and adults) of PHC services in Rio de Janeiro (FCs), the Municipal Health Center (MHC), and city of Rio de Janeiro.

Adult users, or responsible caregivers (in the case of children), responded to the PCATool-Brazil, which measures the degree of orientation for PHC in health services, and some structured questions posed in a questionnaire concerning sociodemographic variables and reported morbidity. The questionnaires were applied by properly trained interviewers with the support of the OTICS-RIO Network of the Municipal Health Department of Rio de Janeiro (MHD-RJ). The data collection period took place between May and June 2024.

Ethical Aspects

This study, entitled “Research to assess the degree of guidance for primary health care (PHC) based on the experience of users of Family Clinics (FCs) in the city of Rio de Janeiro”, was approved by the Ethics Committee of UFRGS under No. 77802624.0.0000.5347/2024 and by MHD-RJ. The interviews were conducted upon presentation of a research letter to users or guardians, as well as after reading and digitally marking the Free and Informed Consent Form.

Research Sample

A 95% confidence interval and a precision (d) of 4% of the estimates to be calculated were considered, recalling that, in addition to the questionnaire scores generated by the PCATool, several questions with frequencies would also be calculated. Therefore, due to the absence of previous studies, the most unfavorable case was considered in which $p=q=0.5$, estimating a sample size (for both adults and children) of 1,120 for FCs and 1,034 for MHCs. This value was calculated considering an estimated loss of 10%. The distribution of interviews in the health units was proportional to the number of FHS teams per planning area (PA), and the sample represents only the total for city of Rio de Janeiro.

Inclusion/exclusion criteria

The participating health units had received at least six months of the implementation of Family Health, according to the MHD-RJ list provided in May 2024. Eligible users were adults aged 18 or over and children aged 12 or under, who were leaving a medical appointment at the health unit on the day of the interview and who had consulted with the physician at the same health unit at least twice in the last two years (including the consultation carried out on the day of the interview). Users who were not physically or mentally able to answer the questionnaire, and those who had not consulted a doctor at least twice at the health unit in the last two years, were excluded.

Data collection

Data collection was conducted by interviewers trained in the OTICS-RIO Network of MHD-RJ from March to April 2024. Users were

systematically approached at the internal entrances of the health units as they were leaving. The questionnaires consisted of the PCATool Brazil¹⁴, in its versions for child and adult users, and questions related to sociodemographic issues, links to the health service, health assessment, and lifestyle habits (for adults only). The Kobotool program version 2024¹³ was used to design the questionnaires, read the images of the questionnaires and validate the data, and build the research database.

Variables

The PCATool Brazil's essential and general scores were used as the outcome variable of the study. The scores for the PHC attributes, as well as the Essential Score and the General Score, were produced according to the instrument manual (Brazil, 2020) and presented on a scale of 0 to 10. The item scores were obtained by transforming the original item scale (ranging from 1 to 4) to the same scale as the scores (ranging from 0 to 10). A score above 6.6 indicates a high quality of health care in the respective item/attribute. Thus, the scores were categorized as High Score above 6.6 and Low Score below 6.6.

The other variables used in both samples included the Net Promoter Score (NPS), sociodemographic information, health status, and health services. The NPS is a tool used to assess patient experience in the international scenario. Using only one question, “On a scale of 0 to 10, how likely are you to recommend a particular service (name of service) to a friend or family member?”, the NPS compares the balance between those who are likely or not to recommend the services, obtaining a strong indication of the patient's perception of the service by analyzing whether or not they would encourage other people to use it^{16,17}. Patients responding to the NPS are divided into three categories: promoters (with scores of 9 and 10), neutral/passive (with scores of 7 and 8), and detractors (with scores of 0 to 6). Promoters are considered those patients who are enthusiastic about the service, while detractors represent dissatisfied patients who give it a negative rating. As the name suggests, passive/neutral respondents are not necessarily dissatisfied, but are not inclined to actively promote the service. The final NPS calculation is based on the percentage of participants considered promoters, subtracting the detractors, and disregarding the neutral/passive respondents. Thus, the result may range

from “-100” to “+100”, with the higher the value, the better the indicator. To better understand the results, the final result was categorized into: Excellence Zone: between 76 and 90, Quality Zone: between 51 and 75, Improvement Zone: between 1 and 50, and Critical Zone: between -100 and 06¹⁸.

The sociodemographic, health condition, and health service variables included for the adult user sample were: age (up to 39 years old/40 to 59 years old/60 or older), sex (male/female), skin color (white/non-white), education (under 10 years/10 to 12 years/more than 12 years), receipt of social assistance - *Bolsa Família* (Family Grant) or *Cartão Família Carioca* (Rio Family Card) (yes/no), economic classification - “*Critério Brasil*” (A, B1 and B2/ C1, C2 and DE) according to ABEP (2024), self-reported health condition (positive/negative), daily use of medication (yes/no), hypertension (yes/no), diabetes (yes/no), time of use of health service (up to 12 months/more than 12 months), number of consultations in the last year (fewer than 5 consultations per year/5 consultations or more during the year), same physician as the last consultation (yes/no), type of PHC service (CF/CMS), type of consultation (scheduled/spontaneous), and private health plan (yes/no).

The sociodemographic, health condition, and health service variables included for the child user sample were: age of the guardian (up to 39 years/ 40 to 59 years/ 60 years or older), education of the guardian (fewer than 10 years/10 to 12 years/more than 12 years), and parenthood of the guardian with the child (Mother yes/ no); and the following information about the children: age (up to 4 years old/over 4 years old), sex (male/female), child's skin color (white/non-white), receives social assistance - *Bolsa Família* or *Cartão Família Carioca* (yes/no), economic classification - “*Critério Brasil*” (A, B1 and B2/ C1, C2 and DE) according to ABEP19, self-reported health condition (positive/negative), daily use of medication (yes/no), time of use of the health service (up to 12 months/more than 12 months), number of consultations in the last year (fewer than 5 consultations per year/5 consultations or more during the year), same physician as the last consultation (yes/no), type of PHC service (CF/CMS), type of consultation (scheduled/spontaneous), and private health plan (yes/no).

Data analysis

Statistical analysis was performed using Stata 16.0 software (StataCorp, College Station, TX, USA). Descriptive analysis was initially performed by estimating the total, mean, and 95% confidence interval (95%CI) values of the PCATool attributes. The relative and absolute frequency of high PCATool scores (general and core attributes) were estimated according to the covariates using Fisher's exact test.

A mixed-effects multilevel logistic regression was used to analyze the association with a high PCATool-Brazil score. Individual data (level 1) were grouped according to the planning area (PA - level 2). Variables with $p > 0.250$ in the crude model were not included in the final model. Covariates were included in the multivariate model in blocks according to their respective theoretical model: i) theoretical model for children: contextual and socioeconomic variables (block 1) were considered distal variables; respondent/parent variables (block 2); general characteristics of the child and self-perception of health (block 3); and variables related to service use (block 4), being the variables most proximal to the outcome; ii) theoretical model for adults: contextual and socioeconomic variables (block 1) were considered distal variables; general characteristics (block 2); health-related variables (block 3); and variables related to the use of service (block 4), being the variables closest to the outcome.

A forward stepwise procedure was used to select variables to be retained in the final model, with only variables with $p \leq 0.05$ being retained. Odds Ratios (ORs) and their 95%CI were estimated. The goodness-of-fit of the multilevel models was evaluated using deviance (-2 log-likelihood). The median odds ratio (MOR) was estimated to quantify the variability between clusters in the model. The MOR translates the variance of the random effect into an odds ratio scale, providing an interpretation of the heterogeneity between clusters. The MOR is defined as the median value of the odds ratio between individuals with the highest and lowest risk when randomly selecting two individuals from different clusters. An MOR value close to 1 indicates low variability between clusters, while higher values suggest greater heterogeneity in risk between clusters. A sensitivity analysis was performed by estimating E-values, which provided insights into the robustness of the results against potential unmeasured confounders.

Results

A total of 889 adults and 956 children responded to the questionnaire and were analyzed. The general characteristics of the population are presented in Table 1. The PCATool score and overall scores were slightly higher in children than in the adult sample (Table 2). The attribute “affiliation” was the attribute with the highest scores in both samples (mean of 9.53 [CI: 9.45-9.61] for children and mean of 9.20 [CI: 9.07-9.32] for adults). The attribute “community orientation” was the attribute with the lowest score in the child sample 4.57 [CI: 4.40-4.75], while the attribute “comprehensiveness – services provided” showed the lowest score in the adult sample 4.50 [CI: 4.33-4.68].

Tables 3 and 4 show the distribution of high PCATool scores according to the covariates for child and adult samples, respectively. Both samples, having consulted the same physician in the last consultation and five or more times during the past year, were associated with a high score. Regarding the NPS scores, the adult sample presented a higher score (+28) than the child sample (+15), both classified within the improvement zone. Individuals who were classified as health service promoters according to the NPS were associated with a better evaluation for all PHC attributes and essential and general PCATool scores in both samples (Table 5).

Table 6 presents the results of the factors associated with high PCATool scores (general and essential) based on multilevel logistic regression for the general and essential score in the children’s sample. In the adjusted model of the general score, individuals responsible for children with higher education (≥ 12 years) (OR=1.97, 95%CI [1.31-2.96]), children with positive self-perception of health (OR=1.76, 95%CI [1.17-2.65]), with five or more consultations in the past year (OR=1.33, 95%CI [1.01-1.75]), and consultations with the same physician (OR=2.34, 95%CI [1.77-3.08]) were associated with a higher score. An MOR of 1.46 was observed in the final model, indicating that, if an individual moved from a lower-risk cluster to a higher-risk cluster, their odds would increase by 46%. Considering the essential score, having more than 12 years of schooling (OR=1.99, 95%CI [1.26-3.14]), reporting positive self-perception of health (OR=1.77, 95%CI [1.17-2.69]), consulting a physician five times or in the last year (OR=1.45, 95%CI [1.08-1.95]), and consulting the same physician (OR=2.98, 95%CI [2.22-4.01]) were associated with a high-

er PCATool score, while guardians of children older than 4 years had a 36% lower chance of indicating a worse score (OR=0.64, 95%CI [0.48-0.85]). An MOR of 1.45 was observed in the final model.

Table 7 presents the results of the multilevel logistic regression for the adult sample. In the adjusted model of the overall score, individuals who consult at the CF (OR=1.30, 95%CI [1.01-1.71]), with children (OR=1.57, 95%CI [1.14-2.18]), with positive self-perception of health (OR=1.78, 95%CI [1.16-2.71]), with diabetes (OR=1.75, 95%CI [1.11-2.76]), with five or more consultations in the last year (OR=2.63, 95%CI [1.68-4.11]) and consulting with the same doctor (OR=3.42, 95%CI [2.19-5.32]) were associated with a higher score on the PCATool, while retired individuals (OR=0.62, 95%CI [0.45-0.85]) were associated with reporting a low score. An MOR of 1.00 was observed in this final model, indicating that there was no change in risk according to the different clusters. We also observed a significant reduction in deviance in the block of health-related variables, indicating that these variables were the ones that most improved the quality of the model’s fit. For the essential score, individuals with children (OR=1.75, 95%CI [1.26-2.42]), with positive self-perceived health (OR=2.27, 95%CI [1.45-3.55]), with hypertension (OR=1.70, 95%CI [1.09-2.63]) and diabetes (OR=1.72, 95%CI [1.06-2.78]), with five or more consultations in the last year (OR=2.57, 95%CI [1.62-4.09]) and consulting with the same doctor (OR=3.48, 95%CI [2.19-5.52]) were associated with a higher PCATool score. However, retired individuals (OR=0.56, 95%CI [0.41-0.77]) were associated with reporting a low score. A MOR of 1.32 was observed in this final model.

Discussion

The results showed that the city of Rio de Janeiro health services presented an essential score of 7.11, 95%CI [7.03-7.19] and an overall score of 6.72, 95%CI [6.63-6.81] above 6.6 for the child sample, which represents good guidance for PHC, according to the PCATool-Brazil, and an essential score of 6.64, 95%CI [6.55-6.73] above 6.6 for the adult sample, and an overall score slightly below 6.40, 95%CI [6.30-6.55], but close to the cut-off point.

The overall score found in the adult sample and the child sample presented a higher result than that observed in Brazil of 5.9, 95%CI [5.8-

Table 1. General characteristics of the surveyed population in city of Rio de Janeiro – 1st semester/2024.

Variables	Child Users - n (%)			Adult Users - n (%)		
	Total (n=956)	FC (n=491)	MHC (n=465)	Total (n=889)	FC (n=455)	MHC (n=434)
Social Class						
A, B1 and B2	114 (12.1)	53 (12.2)	61 (14.1)	259 (29.2)	137 (30.1)	122 (28.1)
C1, C2 and DE	753 (86.9)	382 (87.8)	371 (85.9)	630 (70.9)	318 (69.9)	312 (71.9)
Receives Social Aid						
No	400 (41.8)	208 (42.4)	192 (41.3)	665 (74.8)	337 (74.1)	328 (75.6)
Yes	556 (58.2)	283 (57.6)	273 (58.7)	224 (25.2)	118 (25.9)	106 (24.4)
Guardian's age/Age						
≤ 39	762 (80.1)	394 (90.9)	368 (79.3)	338 (38.2)	162 (35.7)	176 (40.8)
40 to 59	168 (17.7)	81 (16.6)	87 (18.8)	274 (30.9)	143 (31.5)	131 (30.3)
≥ 60	21 (2.2)	12 (2.5)	9 (1.9)	274 (30.9)	149 (32.8)	125 (29.9)
Child's age						
0 to 4	547 (57.3)	289 (59.0)	258 (55.6)			
> 4	407 (42.7)	201 (41.0)	206 (44.4)			
Responsible Mother of the Child						
No	156 (16.3)	73 (14.9)	83 (17.8)			
Yes	800 (83.7)	418 (85.1)	382 (82.2)			
Schooling (years)						
< 10	269 (28.3)	167 (34.3)	102 (22.0)	350 (39.4)	198 (43.5)	152 (35.1)
10 to 12	513 (53.9)	244 (50.1)	269 (58.0)	372 (41.9)	181 (39.8)	191 (44.1)
> 12	169 (17.8)	76 (15.6)	93 (20.0)	166 (18.7)	76 (16.7)	90 (20.8)
Has a child						
No				203 (22.8)	93 (20.4)	110 (25.3)
Yes				686 (77.2)	362 (79.6)	324 (74.7)
Employment status						
Employed				385 (43.3)	187 (41.1)	198 (45.6)
Unemployed				222 (25.0)	122 (26.8)	100 (23.1)
Retired				282 (31.7)	146 (32.1)	136 (31.3)
Child's sex						
Female	452 (47.3)	253 (51.5)	199 (42.8)	611 (68.7)	308 (67.7)	303 (69.8)
Male	504 (52.7)	238 (48.5)	266 (57.2)	278 (31.3)	147 (32.3)	131 (30.2)
Skin Color						
White	341 (35.9)	164 (33.7)	177 (38.1)	284 (31.9)	148 (32.5)	136 (31.3)
Not white	610 (64.1)	323 (66.3)	287 (61.9)	605 (68.1)	307 (67.5)	298 (68.7)

it continues

5.9] and in the state of Rio de Janeiro of 5.3. 95%CI [5.6-5.9] in 2019²⁰. Nevertheless, the result of the present study demonstrated an improvement as compared to the results found for the most recent survey with a sample of users and children conducted in the same municipalities in the first half of 2014, which found an essential score of 5.93, 95%CI [5.82-6.04] and an overall score of 5.73, 95%CI [5.60-5.84] for the adult sample and an essential score of 6.30, 95%CI [6.18-6.43] and an overall score of

6.09, 95%CI [5.95-6.22] for the child sample¹⁵. However, the results found in this study for the city of Rio de Janeiro were below the results reported in the literature in cities such as Montevideo (7.51/6.93), the metropolitan region of Seoul (7.63/7.45), the Santander department in Colombia (7.84/6.99), Shigats and Linzi in Tibet (7.36/7.41), and Columbia in the USA (6.99/6.63)⁷.

The investigation of the association between sociodemographic characteristics and self-re-

Table 1. General characteristics of the surveyed population in city of Rio de Janeiro – 1st semester/2024.

Variables	Child Users - n (%)			Adult Users - n (%)		
	Total (n=956)	FC (n=491)	MHC (n=465)	Total (n=889)	FC (n=455)	MHC (n=434)
Self-reported Health Condition						
Negative (Average/poor/very poor)	113 (11.9)	55 (11.3)	58 (12.5)	385 (43.3)	203 (44.6)	182 (41.9)
Positive (Good/very good)	835 (88.1)	431 (88.7)	404 (87.5)	504 (56.7)	252 (55.4)	252 (58.1)
Private Health Insurance						
No				815 (91.7)	415 (91.2)	400 (92.2)
Yes				74 (9.3)	40 (8.8)	34 (7.8)
Hypertension						
No				168 (41.1)	84 (38.0)	84 (44.7)
Yes				241 (58.9)	137 (62.0)	104 (55.3)
Diabetes						
No				280 (68.5)	146 (66.1)	134 (71.3)
Yes				129 (31.5)	75 (33.9)	54 (28.7)
Use of Continuous Medication						
No				428 (48.1)	212 (46.6)	216 (49.8)
Yes				461 (51.9)	243 (53.4)	218 (50.2)
Service Usage Time						
≤ 12 months	250 (26.3)	129 (26.5)	121 (26.1)	95 (10.7)	49 (10.8)	46 (10.6)
> 12 months	701 (73.7)	358 (73.5)	343 (73.9)	793 (89.3)	405 (89.2)	388 (89.4)
Number of Consultations in the Last Year						
< 5	484 (50.9)	249 (51.1)	235 (50.8)	450 (41.1)	223 (49.9)	227 (52.4)
≥ 5	466 (49.1)	238 (48.9)	228 (49.3)	430 (48.9)	224 (50.1)	206 (47.6)
Same Doctor from the Last Consultation						
No	381 (40.1)	195 (40.0)	186 (40.1)	496 (55.8)	253 (55.6)	243 (55.9)
Yes	570 (59.9)	292 (60.0)	278 (59.9)	393 (44.2)	202 (44.4)	191 (44.1)
Type of Consultation						
Spontaneous				401 (45.1)	207 (45.5)	240 (55.3)
Scheduled				488 (54.9)	248 (54.5)	194 (44.7)
NPS						
Detractors	221 (23.2)	122 (25.1)	99 (21.3)	186 (20.9)	106 (23.3)	80 (18.4)
Neutrals	364 (38.3)	174 (35.7)	190 (41.0)	272 (30.6)	133 (29.2)	139 (32.0)
Promoters	366 (38.5)	191 (39.2)	175 (37.7)	431 (48.5)	216 (47.5)	215 (49.6)

FC: Family Clinic; MHC: Municipal Health Center.

Source: Harzheim²⁷.

ported health conditions of the user and the characteristics of the service and the essential/general score is not widely disseminated in the literature. A study in Hong Kong involving adult users observed that having higher than a secondary education, a higher income, being diagnosed with a chronic disease, and having a private family physician as their primary care provider were associated with the general score²¹. In a national study aimed at estimating the quality of Brazilian PHC based on the experience of adult users, Rech *et al.*²² observed that being older, belonging

to a lower socioeconomic status, having more than one chronic disease, and having a physician make house calls were associated with the general score. The result was in line with the findings presented in this study, which found an association between the general and essential scores. For adult users, positive self-reported health status, having seen the same physician in the last appointment, and having seen a physician five or more times during the past year were associated with a high score. Similar results were found for the child sample, where individuals responsible

Table 2. Mean scores and 95% confidence intervals (95%CI) of Primary Health Care attributes in the experience of adult and child users. City of Rio de Janeiro – 1st semester/2024.

Attributes of Primary Health Care	Adult Users						
	Geral		FC		MHC		p-value
	n	Average (95%CI)	n	Average (95%CI)	n	Average (95%CI)	
Affiliation	898	9.20 (9.07-9.32)	461	9.07 (8.89-9.26)	437	9.33 (9.17-9.49)	0.4718
Use	897	8.53 (8.39-8.67)	461	8.46 (8.25-8.66)	436	8.61 (8.43-8.80)	0.0494
Accessibility	882	4.79 (4.67-4.92)	455	4.75 (4.58-4.92)	427	4.84 (4.65-5.03)	0.0459
Longitudinality	897	6.71 (6.58-6.84)	461	6.68 (6.49-6.86)	436	6.75 (6.55-6.94)	0.0523
Care Coordination	434	7.24 (6.97-7.52)	218	7.02 (6.62-7.43)	216	7.47 (7.10-7.83)	0.0675
Coordination - Information System	829	7.12 (6.96-7.29)	422	6.99 (6.75-7.22)	407	7.27 (7.03-7.51)	0.1794
Comprehensiveness - Available Services	777	4.85 (4.68-5.02)	401	4.83 (4.59-5.06)	376	4.88 (4.64-5.13)	0.0528
Comprehensiveness - Services Provided	781	4.50 (4.33-4.68)	405	4.36 (4.12-4.61)	376	4.66 (4.40-4.91)	0.3244
Essential Score	886	6.64 (6.55-6.73)	455	6.54 (6.41-6.67)	431	6.74 (6.62-6.87)	0.0022
Family Guidance	880	5.93 (5.72-6.14)	451	5.89 (5.59-6.18)	429	5.98 (5.68-6.28)	0.5402
Community Guidance	766	4.98 (4.80-5.15)	401	4.88 (4.63-5.13)	365	5.08 (4.83-5.33)	0.8728*
Overall Score	889	6.40 (6.30-6.50)	455	6.31 (6.17-6.45)	434	6.50 (6.36-6.63)	0.0094

Attributes of Primary Health Care	Child Users						
	Geral		FC		MHC		p-value
	n	Average (95%CI)	N	Average (95%CI)	n	Average (95%CI)	
Affiliation	961	9.53 (9.45-9.61)	492	9.48 (9.36-9.60)	469	9.59 (9.48-9.70)	0.2289
Use	959	8.63 (8.51-8.74)	492	8.57 (8.40-8.73)	467	8.69 (8.53-8.85)	0.3070
Accessibility	956	5.82 (5.67-5.96)	491	5.76 (5.55-5.97)	465	5.87 (5.67-6.07)	0.5844
Longitudinality	957	6.69 (6.57-6.81)	491	6.49 (6.32-6.67)	466	6.89 (6.73-7.05)	0.0038
Care Coordination	215	7.34 (6.91-7.76)	108	7.28 (6.69-7.88)	107	7.39 (6.78-8.00)	0.6843
Coordination - Information System	894	7.37 (7.22-7.51)	464	7.33 (7.12-7.53)	430	7.42 (7.21-7.63)	0.4699
Comprehensiveness - Available Services	898	5.91 (5.75-6.06)	471	5.80 (5.59-6.01)	427	6.02 (5.80-6.24)	0.1691
Comprehensiveness - Services Provided	874	5.65 (5.43-5.88)	453	5.49 (5.17-5.81)	421	5.83 (5.52-6.15)	0.1676
Essential Score	954	7.11 (7.03-7.19)	491	7.01 (6.89-7.13)	463	7.22 (7.11-7.33)	0.0222
Family Guidance	939	5.72 (5.52-5.91)	478	5.47 (5.19-5.74)	461	5.97 (5.70-6.25)	0.0103
Community Guidance	791	4.57 (4.40-4.75)	407	4.66 (4.43-4.90)	384	4.48 (4.22-4.74)	0.8502*
Overall Score	956	6.72 (6.63-6.81)	491	6.63 (6.50-6.75)	465	6.82 (6.70-6.95)	0.0373

* Student's t Test.

Source: Harzheim²⁷.

for the children with higher levels of education, positive self-reported health status, having seen the same physician in the last appointment, and having seen the physician five or more times during the past year were associated with a high score. No studies were found in the literature that proposed investigating sociodemographic characteristics and self-reported health status for a sample of child users.

For both samples, consulting the same physician and using the PHC service more frequently were associated with better essential and general scores. This could be an effect of longitudinality of care and access, which improves the trajectory

of service quality. Another relevant aspect is that 48.4% of the adult sample and 22.5% of the child sample responded to the care coordination attribute. This may reflect the adults' high referral, considering the evaluation items for this attribute pertain to referrals. The reduction in referrals and possible improvement could be explained by adopting clinical protocols and qualified professional training based on medical residencies in these spaces.

Health Residencies play a crucial role in qualifying health professionals and improving PHC services. The MHD-RJ has one of the largest Family and Community Medicine Res-

Table 3. High PCATool scores according to characteristics of child users. Rio de Janeiro. Brazil. 2024 (n=956).

High PCATool scores in child sample				
Covariables	Overall score		Essential score	
	High score n (%)	p-value	High score n (%)	p-value
Social Class		0.176		0.250
A, B1 and B2	60 (52.6)		73 (64.6)	
C1, C2 and DE	435 (57.8)		514 (68.3)	
Type of service		0.013		0.018
MHC	263 (53.6)		319 (64.9)	
FC	283 (60.9)		331 (71.5)	
Social Aid		0.346		0.186
No	225 (56.7)		278 (69.9)	
Yes	321 (57.7)		372 (66.9)	
Mother of the child		0.048		0.096
No	99 (63.5)		113 (72.9)	
Yes	447 (55.9)		537 (67.2)	
Guardian's age (years)		0.775		0.849
≤ 39	440 (57.7)		520 (68.4)	
40 to 59	92 (54.8)		111 (66.1)	
≥ 60	12 (57.1)		15 (71.4)	
Guardian's schooling		0.001		0.004
< 10	130 (48.3)		172 (63.9)	
10 to 12	302 (58.9)		343 (66.9)	
> 12	112 (66.3)		131 (78.4)	
Child's sex		0.129		0.239
Female	249 (55.1)		301 (66.9)	
Male	289 (58.9)		349 (69.2)	
Child's age (years)		0.043		0.003
0 to 4	326 (59.6)		393 (71.9)	
> 4	219 (53.8)		256 (63.2)	
Skin color		0.477		0.261
White	196 (57.5)		235 (69.5)	
Not white	348 (57.0)		411 (67.3)	
Self-reported Health Condition		0.004		0.001
Negative (Average/poor/very poor)	51 (45.1)		62 (54.9)	
Positive (Good/very good)	491 (58.8)		582 (69.9)	
Service Usage Time		0.529		0.063
≤ 12 months	143 (57.2)		181 (72.1)	
> 12 months	401 (57.2)		465 (66.6)	
Number of Consultations in the Last Year		0.017		0.002
< 5	260 (53.7)		307 (63.6)	
≥ 5	283 (60.7)		338 (72.7)	
Same Doctor from the Last Consultation		0.017		<0.001
No	170 (44.6)		204 (53.7)	
Yes	374 (65.6)		442 (77.7)	

Source: Harzheim²⁷.

Table 4. High PCATool scores according to characteristics of adult users. Rio de Janeiro, Brazil, 2024 (n=889).

Covariables	High PCATool scores in adult sample			
	Overall score		Essential score	
	High score n (%)	p-value	High score n (%)	p-value
Social Class		0,057		0,255
A, B1 and B2	110 (42,5)		130 (50,8)	
C1, C2 and DE	306 (48,6)		337 (53,5)	
Type of Service		0,026		0,036
MHC	198 (43,5)		226 (49,7)	
FC	2.018 (50,2)		241 (55,9)	
Social Aid		0,458		0,263
No	310 (46,6)		353 (53,4)	
Yes	106 (47,3)		114 (50,7)	
Sex		0,310		0,191
Female	282 (46,2)		315 (51,6)	
Male	134 (48,2)		152 (55,1)	
Schooling (years)		0,892		0,703
< 10	161 (46,0)		179 (51,0)	
10 to 12	175 (47,0)		199 (53,9)	
> 12	80 (48,2)		89 (53,9)	
Has a child		0,006		0,001
No	79 (38,9)		87 (42,7)	
Yes	337 (49,1)		380 (55,7)	
Employment status		0,003		<0,001
Employed	191 (49,6)		216 (56,1)	
Unemployed	116 (52,3)		130 (59,1)	
Retired	109 (38,6)		121 (43,1)	
Age (years)		0,084		<0,005
18 to 39	146 (43,2)		160 (47,2)	
40 to 59	127 (46,4)		141 (52,0)	
≥ 60	143 (52,2)		165 (60,4)	
Skin color		0,035		0,068
White	146 (51,4)		160 (56,5)	
Not white	270 (44,6)		307 (50,9)	

it continues

idency Programs (FCMRP) in Brazil, which was established in 2012 as an outcome of PHC care reform in the city of Rio de Janeiro²³. Some previous studies have suggested that units with FCMRPs or residencies in Family Health have different scores in the PCATool-Brazil as compared to those that do not have them^{24,25}. In the study conducted in the city of Rio de Janeiro¹⁵, using the PCATool-Brazil, the results were superior in areas where FCMRPs were traditionally present. Therefore, literature on the subject is still scarce and lacks robust sampling, and new

studies are needed to assess the effects of Health Residencies on the PCATool scores.

The use of NPS as a measure of user satisfaction in PHC has been gradually introduced. In the Continuous National Household Sample Survey²⁶, in the PHC module interviewing guardians of children under 13 years of age, the NPS for the state of Rio de Janeiro was found to be +28 (the same result found for Brazil), although higher than that found in this study for the municipality (+15), placing both results within the NPS Improvement Zone.

Table 4. High PCATool scores according to characteristics of adult users. Rio de Janeiro, Brazil, 2024 (n=889).

High PCATool scores in adult sample				
Covariables	Overall score		Essential score	
	High score n (%)	p-value	High score n (%)	p-value
Self-reported Health Condition		0.043		0.011
Negative (Average/poor/very poor)	167 (43.4)		186 (48.2)	
Positive (Good/very good)	249 (49.4)		281 (56.2)	
Private Health Insurance		0.303		0.362
No	384 (47.1)		432 (52.9)	
Yes	32 (43.2)		35 (50.0)	
Hypertension		0.006		0.001
No	70 (41.7)		78 (46.7)	
Yes	132 (54.8)		151 (62.9)	
Diabetes		0.003		0.002
No	125 (44.6)		143 (51.2)	
Yes	77 (59.7)		86 (67.2)	
Use of continuous medicine		0.032		0.006
No	186 (43.5)		206 (48.2)	
Yes	230 (49.9)		261 (56.9)	
Service Usage Time		0.340		0.138
≤ 12 months	42 (44.2)		44 (46.8)	
> 12 months	373 (47.0)		422 (53.4)	
Number of consultations in the last year		<0.001		<0.001
< 5	177 (39.3)		209 (46.8)	
≥ 5	323 (53.9)		251 (58.4)	
Same doctor from the last consultation		<0.001		<0.001
No	136 (34.6)		158 (40.4)	
Yes	280 (56.5)		309 (62.4)	
Type of consultation		0.028		0.082
Spontaneous	173 (43.1)		199 (50.0)	
Scheduled	243 (49.8)		268 (54.9)	

Source: Harzheim²⁷.

To the best of the knowledge of the authors of this study, no previous studies have tested the association between NPS and PCATool scores. However, the present study observed a strong direct association, thus highlighting the possibility of using NPS in new PHC evaluation studies as an outcome of user satisfaction, indicating the option of using it as a quick estimation measure by managers.

Final considerations

Several challenges remain evident for city of Rio de Janeiro. Despite the recent expansion of PHC

services within the municipality, access in some areas remains a major barrier to improving their quality. The use of scheduling tools, remote access methods, and extending the hours of PHC services may be important steps toward improving the scenario. Another attribute is comprehensiveness. Although the municipality has a broad portfolio of PHC services, it may be necessary to create metrics and indicators so that the available services are, in reality, offered. In addition, the research has shown that it is desirable to strengthen communication with the population as a way to publicize what is available in each health unit.

Table 5. Mean scores and 95% confidence intervals (95%CI) of Primary Health Care attributes in the experience of adult and child users by Promoters and Detractors according to the NPS. City of Rio de Janeiro - 1st semester/2024.

Attribute	Child Users				Adult Users					
	Detractors		Promoters		p-value	Detractors		Promoters		
	n	Average (95%CI)	n	Average (95%CI)		n	Average (95%CI)	n	Average (95%CI)	
Affiliation	223	9.30 (9.09-9.50)	366	9.64 (9.52-9.75)	0.0032	191	8.71 (8.38-9.04)	433	9.41 (9.26-9.57)	<0.0001
First Contact Access	223	8.23 (7.96-8.50)	366	8.88 (8.72-9.04)	0.0003	190	7.97 (7.65-8.29)	433	8.77 (8.58-8.96)	<0.0001
Accessibility	222	3.85 (3.57-4.13)	365	7.04 (6.86-7.23)	<0.0001	190	3.23 (2.99-3.48)	426	5.58 (5.43-5.74)	<0.0001
Longitudinality	222	5.29 (5.03-5.56)	366	7.55 (7.39-7.70)	<0.0001	190	5.03 (4.74-5.32)	433	7.49 (7.33-7.64)	<0.0001
Coordination - Integration of Care	58	6.03 (5.09-6.97)	91	8.11 (7.55-8.67)	0.0002	91	4.69 (4.03-5.35)	216	8.18 (7.87-8.49)	<0.0001
Coordination - Information System	206	6.73 (6.38-7.08)	350	7.82 (7.63-8.01)	<0.0001	164	5.93 (5.53-6.34)	417	7.70 (7.48-7.91)	<0.0001
Comprehensiveness - Available Services	206	5.20 (4.89-5.51)	346	6.44 (6.19-6.69)	<0.0001	162	3.86 (3.51-4.20)	374	5.39 (5.14-5.63)	<0.0001
Comprehensiveness - Services Provided	198	4.03 (3.55-4.50)	343	6.73 (6.40-7.07)	<0.0001	166	3.28 (2.92-3.64)	380	5.22 (4.97-5.48)	<0.0001
Essential Score	221	6.12 (5.95-6.29)	365	7.75 (7.64-7.86)	<0.0001	186	5.45 (5.25-5.65)	430	7.21 (7.10-7.32)	<0.0001
Family Guidance	214	4.23 (3.83-4.63)	363	6.95 (6.67-7.22)	<0.0001	184	4.24 (3.77-4.71)	428	6.83 (6.55-7.11)	<0.0001
Community Guidance	190	3.18 (2.87-3.50)	306	5.57 (5.31-5.83)	<0.0001*	167	3.31 (2.96-3.66)	369	5.92 (5.67-6.16)	<0.0001*
Overall Score	221	5.64 (5.45-5.82)	366	7.45 (7.34-7.56)	<0.0001	186	5.10 (4.90-5.31)	431	7.04 (6.92-7.15)	<0.0001

* Student's t Test

Source: Harzheim²⁷.

Table 6. Multilevel logistic regression reporting Odds Ratio (OR) of factors associated with high PCATool scores in a Brazilian sample of children (n=956).

Covariables	Overall Score			Essential Score		
	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)	OR ^{bruto} (95%CI)	OR ^{ajustado} (IC95%) E-values (LCI)
Block 1: contextual and socioeconomic variables						
	-2 log likelihood (empty model)=1,287.87			-2 log likelihood (empty model)=1,184.27		
Social Class						
A. B1 and B2	0.410		-		0.574	-
C1. C2 and DE	1		-		1	-
Type of Service	1.18 (0.79-1.77)			1.13 (0.74-1.72)		
MHC	0.085		-	0.077	-	-
FC	1		-	1	-	
Social aid	1.26 (0.97-1.64)			1.29 (0.97-1.70)		
No	0.600		-	0.353	-	-
Yes	1		-	1	-	
	1.07 (0.82-1.40)			0.87 (0.66-1.16)		
Block 2: Participant + parental variables						
	-2 log likelihood=1,287.87			-2 log likelihood=1,184.27		
Mother of the child						
No	0.074		-	0.154	-	-
Yes	1		-	1	-	
Guardian's age (years)	0.72 (0.50-1.03)			0.75 (0.51-1.11)		
≤ 39	0.526		-	0.596	-	-
40 to 59	1		-	1	-	
≥ 60	0.82 (0.58-1.16)			0.85 (0.59-1.21)		
Guardian's schooling	1.05 (0.43-2.57)			1.24 (0.47-3.27)		
< 10	0.003		0.003	0.008	0.008	0,008
10 to 12	1		1	1	1	
> 12	1.44 (1.06-1.96)		1.44 (1.06-1.96)	1.09 (0.79-1.50)	1.09 (0.79-1.50)	1.40 (1.00)
	1.97 (1.31-2.96)		1.97 (1.31-2.96)	1.99 (1.26-3.14)	1.99 (1.26-3.14)	3.39 (1.83)
	-2 log likelihood=1,269.43			-2 log likelihood=1,167.66		

it continues

Table 6. Multilevel logistic regression reporting Odds Ratio (OR) of factors associated with high PCATool scores in a Brazilian sample of children (n=956).

Covariables	Overall Score			Essential Score			
	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)	OR ^{bruto} (95%CI)	OR ^{ajustado} (IC95%)	p-value E-values (LCI)
Block 3: General characteristics of the child + self-perception of health							
Child's sex							
Female	0.156		-		0.350	-	-
Male	1		-		1	-	
Child's age (years)	1.21 (0.93-1.57)				1.14 (0.86-1.50)		
0 to 4	0.030		-		0.001	0.002	0,002
> 4	1		-		1	1	
Skin color	0.74 (0.57-0.97)				0.63 (0.47-0.84)	0.64 (0.48-0.85)	2.50 (1.63)
White	0.881		-		0.422	-	-
Not White	1		-		1	-	
Self-reported Health Condition	0.97 (0.74-1.29)				0.89 (0.66-1.19)		
Negative (Average/poor/very poor)	0.003		0.007		0.001	0.007	0,007
Positive (Good/very good)	1		1		1	1	
	1.85 (1.23-2.77)		1.76 (1.17-2.65)	2.92 (1.62)	1.95 (1.30-2.94)	1.77 (1.17-2.69)	2.94 (1.62)
			-2 log likelihood=1,258.01			-2 log likelihood=1,140.93	
Block 4: Variables related to service usage							
Service Usage Time	0.878		-		0.090	-	-
≤ 12 months	1		-		1	-	
> 12 months	0.97 (0.72-1.31)				0.76 (0.55-1.04)		
Number of Consultations in the Last Year	0.024		0.040		0.002	0.014	0,014
< 5	1		1		1	1	
≥ 5	1.35 (1.04-1.76)		1.33 (1.01-1.75)	1.99 (1.11)	1.57 (1.18-2.08)	1.45 (1.08-1.95)	2.26 (1.37)
Same Doctor from the Last Consultation	<0.01		<0.001		<0.001	<0.001	<0,001
No	1		1		1	1	
Yes	2.33 (1.77-3.05)		2.34 (1.77-3.08)	4.11 (2.94)	2.96 (2.22-3.94)	2.98 (2.22-4.01)	5.41 (3.87)
			-2 log likelihood (complete model)= 1,212.98 MOR: 1.46			-2 log likelihood (complete model)=1,076.80 MOR: 1.45	

LCI: lower confidence interval; MOR: Median Odds Ratio.
Source: Harzheim²⁷.

Table 7. Multilevel logistic regression reporting Odds Ratio (OR) of factors associated with high PCATool scores in a Brazilian sample of adults (n=889).

Covariables	Overall score				Essential score			
	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)
	-2 log likelihood (empty model)=1,228.76				-2 log likelihood (empty model)=1,223.19			
Block 1: contextual and socioeconomic variables								
Social Class	0.098		-		0.635		-	
A, B1 and B2	1		-		1		-	
C1, C2 and DE	1.28 (0.96-1.71)				1.07 (0.80-1.45)			
Type of Service	0.045		0.045		0.094		-	
MHC	1		1		1		-	
FC	1.30 (1.01-1.71)		1.30 (1.01-1.71)	1.92 (1.11)	1.26 (0.96-1.64)			
Social aid	0.855		-		0.439		-	
No	1		-		1		-	
Yes	1.03 (0.75-1.39)				0.88 (0.65-1.20)			
-2 log likelihood=1.224.73								
Block 2: Overall characteristics								
Sex	0.571		-		0.293		-	
Female	1		-		1		-	
Male	1.08 (0.81-1.44)				1.17 (0.87-1.56)			
Schooling (years)	0.893		-		0.709		-	
< 10	1		-		1		-	
10 to 12	1.04 (0.79-1.40)				1.13 (0.84-1.52)			
> 12	1.09 (0.75-1.58)				1.11 (0.76-1.61)			
Has a child	0.011		0.006		0.001		0.001	0.001
No	1		1				1	
Yes	1.52 (1.10-2.09)		1.57 (1.14-2.18)	2.52 (1.54)	1.70 (1.24-2.35)		1.75 (1.26-2.42)	2.90 (1.83)
Employment status	0.003		0.018		<0.001		<0.001	<0.001
Employed	1		1		1		1	
Unemployed	1.11 (0.79-1.55)		1.07 (0.76-1.49)	1.34 (1.00)	1.15 (0.82-1.61)		1.07 (0.76-1.51)	1.34 (1.00)
Retired	0.64 (0.47-0.87)		0.62 (0.45-0.85)	2.61 (1.63)	0.59 (0.43-0.80)		0.56 (0.41-0.77)	2.97 (1.92)

it continues

Table 7. Multilevel logistic regression reporting Odds Ratio (OR) of factors associated with high PCATool scores in a Brazilian sample of adults (n=889).

Covariables	Overall score			Essential score		
	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)
Age (years)						
18 to 39	1		-		-	-
40 to 59	1,14 (0,82-1,56)		-		-	
≥ 60	1,43 (1,04-1,98)					
Skin color						
White	0,059		-		-	-
Not White	1		-		-	
	0,76 (0,57-1,01)				0,79 (0,59-1,05)	
Block 3: Variables related to health						
			-2 log likelihood=1,205.58		-2 log likelihood=1,195.28	
Self-reported Health Condition	0,074		0,008		<0,001	<0,001
Negative (Average/poor/very poor)	1		1		1	
Positive (Good/very good)	1,27 (0,97-1,66)		1,78 (1,16-2,71)		2,27 (1,45-3,55)	3,97 (2,26)
Private Health Insurance	0,523		-		-	-
No	1		-		-	
Yes	0,85 (0,53-1,38)					
Hypertension	0,009		-		0,002	0,002
No	1		-		1	
Yes	1,69 (1,14-2,52)				1,70 (1,09-2,63)	2,79 (1,40)
Diabetes	0,005		0,016		0,028	0,028
No	1		1		1	
Yes	1,84 (1,20-2,80)		1,75 (1,11-2,76)		1,72 (1,06-2,78)	2,83 (1,31)
Use of continuous medication	0,055		-		-	-
No	1		-		-	
Yes	1,29 (0,99-1,68)				1,43 (1,09-1,87)	
			-2 log likelihood=533.29		-2 log likelihood=510.84	

it continues

Table 7. Multilevel logistic regression reporting Odds Ratio (OR) of factors associated with high PCATool scores in a Brazilian sample of adults (n=889).

Covariables	Overall score			Essential score		
	OR ^{bruto} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value	OR ^{ajustado} (95%CI)	p-value E-values (LCI)
Block 4: Variables related to service usage						
Service Usage Time	0.602	-	-	-	-	-
≤ 12 months	1	-	-	-	-	-
> 12 months	1.12 (0.73-1.72)					
Number of Consultations in the Last Year	<0.001	<0.001	<0.001		<0.001	<0.001
< 5	1		1		1	
≥ 5	1.80 (1.38-2.36)		2.63 (1.68-4.11)	4.70 (2.75)	2.57 (1.62-4.09)	4.58 (2.62)
Same Doctor from the Last Consultation	<0.001		<0.001		<0.001	<0.001
No	1		1		1	
Yes	2.45 (1.86-3.22)		3.42 (2.19-5.32)	6.30 (3.80)	3.48 (2.19-5.52)	6.42 (2.80)
Type of consultation	0.049		-		-	-
Spontaneous	1		-		-	-
Scheduled	1.30 (1.0-1.71)		-		-	-
-2 log likelihood (complete model)=478.32 MOR: 1.00 -2 log likelihood (complete model)=459.97 MOR: 1.32						

LCI: lower confidence interval; MOR: Median Odds Ratio.

Source: Harzheim²⁷.

The city of Rio de Janeiro's PHC has undergone changes over the last 15 years and has been improving the scope of PHC attributes in 2024, representing a return to the quality of the service it offers. Periodic evaluations are essential to understanding the context, comparing results, and correcting directions. Few studies propose to compare the results achieved by PHC services over time, and the city of Rio de Janeiro presents two evaluations conducted over 10 years with methodological characteristics that may be important for future studies with this objective in mind¹⁵.

New studies should be conducted using NPS in PHC, comparing the results with those obtained by the PCATool and observing possible variations according to the characteristics of the services and users. NPS was able to measure user satisfaction from a single question and, thus, be a faster and more economical option for estimating users' perception of the services, in addition to the research having demonstrated a positive association with the overall PCATool score for both adults and children.

Collaborations

OP D'Avila, MC Ribeiro, LF Pinto and E Harzheim participated in the study design and method, writing of the text, presentation of results and final review. LA Chisini performed data analysis, presentation of results and review. YR Mathuiy, VST Meira-Silva and LJN Moura contributed to the discussion of data, review of writing and final formatting of the text.

References

- Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q* 2005; 83(3):457-502.
- Shi L. The impact of primary care: a focused review. *Scientifica (Cairo)* 2012; 2012:432892.
- Koller CF, Khullar D. Primary care spending rate - A lever for encouraging investment in primary care. *N Engl J Med* 2017; 377(18):1709-1711.
- Starfield B, Shi L. Policy relevant determinants of health: an international perspective. *Health Policy* 2002; 60(3):201-218.
- Macinko J, Guanais FC, Fátima M, Souza M. Evaluation of the impact of the Family Health Program on infant mortality in Brazil, 1990-2002. *J Epidemiol Community Health* 2006; 60(1):13-19.
- 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.
- D'Avila OP, Pinto LFS, Hauser L, Gonçalves MR, Harzheim E. O uso do Primary Care Assessment Tool (PCAT): uma revisão integrativa e proposta de atualização. *Cien Saude Colet* 2016; 22(3):855-865.
- Shi L, Starfield B, Xu J. Validating the adult primary care assessment tool. *J Fam Pract* 2001; 50(2):161-175.
- Starfield B, Cassady C, Nanda J, Forrest CB, Berk R. Consumer experiences and provider perceptions of the quality of primary care: implications for managed care. *J Fam Pract* 1998; 46(3):216-226.
- Cassady CE, Starfield B, Hurtado MP, Berk RA, Nanda JP, Friedenbergl LA. Measuring consumer experiences with primary care. *Pediatrics* 2000; 105(4):998-1003.
- Bresick G, Sayed AR, Le Grange C, Bhagwan S, Manga N. Adaptation and cross-cultural validation of the United States Primary Care Assessment Tool (expanded version) for use in South Africa. *Afr J Prim Health Care Fam Med* 2015; 7(1):783.
- Harzheim E, Starfield B, Rajmil L, Álvarez-Dardet C, Stein AT. Internal consistency and reliability of Primary Care Assessment Tool (PCATool-Brasil) for child health services. *Cad Saude Publica* 2006; 22(8):1649-1659.
- Brasil. Ministério da Saúde (MS). *Manual do instrumento de avaliação da atenção primária à saúde: Primary Care Assessment Tool PCATool*. Brasília: MS; 2010.
- Brasil. Ministério da Saúde (MS). *Manual do Instrumento de Avaliação da Atenção Primária à Saúde: PCATool-Brasil - 2020*. Brasília: MS; 2020.
- 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.
- Alismail A, Schaeffer B, Oh A, Hamiduzzaman S, Daher N, Song HY, Furukawa B, Tan LD. The use of the NPS (NPS) in an outpatient allergy and pulmonary clinic: an innovative look into using tablet-based tool vs traditional survey method. *Patient Relat Outcome Meas* 2020; 11:137-142.
- Koladycz R, Fernandez G, Gray K, Marriott H. The NPS (NPS) for Insight Into Client Experiences in Sexual and Reproductive Health Clinics. *Glob Health Sci Pract* 2018; 6(3):413-424.
- Reichheld FF. The one number you need to grow. *Harv Bus Rev* 2003; 81(12):46-54.
- Associação Brasileira de Empresas de Pesquisa (ABEP). *Critério de Classificação Econômica Brasil*. São Paulo: ABEP; 2024.
- 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.
- Wong SY, Kung K, Griffiths SM, Carthy T, Wong MC, Lo SV, Chung VC, Goggins WB, Starfield B. Comparison of primary care experiences among adults in general outpatient clinics and private general practice clinics in Hong Kong. *BMC Public Health* 2010; 10:397.
- Rech MRA, Hauser L, Wollmann L, Roman R, Mengue SS, Kemper ES, Florencio ASR, Alfaro G, Tasca R, Harzheim E. Qualidade da atenção primária no Brasil e associação com o Programa Mais Médicos. *Rev Panam Salud Publica* 2018; 42:e164.
- 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.
- Leão CDA, Caldeira AP. Avaliação da associação entre qualificação de médicos e enfermeiros em atenção primária em saúde e qualidade da atenção. *Cien Saude Colet* 2011; 16(11):4415-4423.
- 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.
- Instituto Brasileiro de Geografia e Estatística (IBGE). *Pesquisa Nacional de Amostra Contínua. Atenção Primária à Saúde 2022* [Internet]. [acessado 2024 nov 20]. Disponível em: <https://static.poder360.com.br/2022/12/pnad-continua-saude-2022.pdf>.
- Harzheim E. *Relatório Final - Pesquisa PCATool - Rio - 2024: Avaliação do grau de orientação para Atenção Primária à Saúde entre as unidades de saúde na cidade do Rio de Janeiro - 2024*. Porto Alegre: UFRGS; 2025.

Article submitted 25/10/2024

Approved 31/01/2025

Final version submitted 02/02/2025

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