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Factors associated with the evaluation of Primary Health Care from the user's perspective: results of the telephone survey Vigitel, 2015

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Abstract *This paper aims to evaluate the performance of PHC from the perspective of users and its association with sociodemographic characteristics, self-reported health conditions, and behavioral risk factors for Chronic Noncommunicable Diseases. This is a population-based cross-sectional study with data from the 2015 VIGITEL Telephone Survey. The Primary Care Assessment Tool short version was adopted. The study population covers adults over 18 years of age who used PHC services in Belo Horizonte in the last 12 months (n = 872). The multiple logistic regression model was performed to estimate the odds ratio. We observed that adults without a health insurance plan are 3.21 (95% CI 2.08-4.96) more likely than those with a health insurance plan to evaluate PHC with a high score (≥ 6.6), and adults with low schooling (95% CI 1.48-5.32), people with diabetes (95% CI 1.05-3.24), obese (95% CI 1.20-3.24), and older adults (95% CI 1.00-1.41) were 2.81, 1.84, 1.97, and 1.19 more likely to report a high score for PHC quality than the others, respectively. The use of the PCATool short version in a telephone survey showed a new possibility for PHC performance assessment and can become useful in managing health services.*

Key words *Primary Health Care, Health services assessment, Health surveillance by telephone survey*

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Introduction

Primary Health Care (PHC) is the guiding axis of the Health Care Network (RAS) in the Brazilian Unified Health System (SUS). It is responsible for ensuring universal and equal access to available health actions and services[1] and reducing hospitalizations for conditions sensitive to primary care. A strong and resolute PHC contributes to curbing health system costs and upholding SUS[2] principles.

According to Starfield and Shi[3], PHC should be considered the gateway to the health system and offer access to prevention, cure, and rehabilitation services. It must also rationalize all available resources for health promotion and maintenance and integrate the health system's points of care to ensure the timely provision of care appropriate to the user's needs[3].

A strengthened and well-structured PHC must include four structural or essential elements: a) first contact; b) longitudinality; c) comprehensiveness; and d) coordination. It should also include two derivative elements: family approach and community orientation[4]. Thus, one of the benchmarks for assessing PHC services is the assessment of these attributes.

Even with the advances in the last decades in health with the consolidation of the SUS and the implementation of the Family Health Strategy (ESF)[5], it is essential to ensure quality care that meets the users' needs. Qualifying the services requires evaluation processes with approaches that show the perspectives of the various health care stakeholders, such as managers, professionals, and users. The assessment also contributes to the identification of barriers and weaknesses of PHC services[6,7].

The evaluation of health services must be understood as a management tool in all health actions. It can direct or redirect health policies and programs, promoting and qualifying health care, and strengthening SUS principles[5]. It also contributes to social control when the results are shared with the population, favoring participation in the decision-making process of managers[6-8].

The Primary Health Care Secretariat (SAPS) was created thirty years into the SUS establishment, thus emphasizing the PHC's relevance as a priority for the SUS. Among the SAPS objectives are the strengthening of PHC's essential and derived attributes, training, professional staffing, care support strategies, and development of information and care technologies[9].

Some tools used in several countries were developed considering the PHC assessment. In a review and meta-synthesis carried out between 1979 and 2013, Fracolli et al.[10] identified the leading national and international PHC assessment tools. They also stated that the Primary Care Assessment Tool (PCATool)[11] is the most widely used instrument in Brazil[10]. In another bibliographic study of scientific production between 2007 and 2017 on the assessment of PHC in the Brazilian context, Ribeiro and Scatena[12] also noted that PCATool[11] was the most widely used instrument in studies published in this period. This instrument is very relevant, considering that it has already been validated and used in several countries and different Brazilian regions, thus allowing comparing outcomes in this research with other studies[12].

Another important issue concerns the profile of health services users. The study by Malta et al.[13] confirmed the recurrent use of these services by people with NCDs, which can be explained by the greater demand for routine visits or complications, more significant associated comorbidities, and the need for continuous monitoring[14,15]. Chronic conditions are severe public health problem[16] and entail high costs for the health system. They also significantly impact the population's quality of life, which shows us that PHC has a fundamental role in representing the link in the health system responsible for monitoring these cases, which often require more complex and coordinated care between different services.

Several risk factors are related to NCDs, such as inadequate diet, excessive salt intake, alcohol abuse, physical inactivity, overweight, tobacco use, and glucose and lipid metabolism disorders[17]. These risk factors are the target of interventions in health policies, mainly within PHC. In this context, this study is relevant considering the scarcity of PHC performance assessment works from the user's perspective and studies with an analysis relating PHC performance assessment to clinical outcomes. Also, PHC assessment using a national population database such as the Surveillance System for Risk and Protective Factors for Chronic Diseases by Telephone Survey (VIGITEL) is of great importance[18]. It was used for the first time for this purpose, which is an innovative and low-cost possibility.

Considering the above, this study carried out in Belo Horizonte using PCATool aims to assess PHC performance from the users' perspective and its association with sociodemographic features, self-reported health conditions, and behavioral risk factors for NCDs.

Methods

This is a cross-sectional population-based study. Data from the Belo Horizonte sample of VIGITEL 2015[18] were used. This study was carried out in Belo Horizonte (BH), the capital of the state of Minas Gerais. In 2019, the PHC of the SUS-BH network achieved 80.82% coverage, with 152 Health Centers, 592 Family Health teams, 304 Oral Health teams, and 152 Mental Health teams, 82 Extended Family Health and Primary Care Center hubs, and 78 City Gyms[19].

VIGITEL 2015 interviewed the adult population (≥18 years old) living in households with at least one landline[18] through a structured questionnaire. The telephone interview starts with using a VIGITEL 2015 questionnaire with questions addressing the demographic and socioeconomic characteristics of individuals, behavioral risk factors for NCDs, and self-reported health conditions[18]. After applying this questionnaire, respondents answered questions to identify those who used any health service in the last 12 months[20,21], as follows:

- "When you are sick or in need of treatment to take care of your health, which health service do you usually look for?" (If public or private, whether PHC, hospital, or emergency department);

- "In the last 12 months, did you seek care at a PHC Unit (UBS) (whether a health post, health center, or family health unit) to take care of your health? ("Yes" or "no"). If so, how many times?".

Thus, for this study, the adult interviewed who answered that he had sought some PHC health service at least once in the last 12 months and that mentioned the name or location of the UBS sought in the city of Belo Horizonte was considered[20,21]. These respondents were then invited to answer the *VIGITEL evaluation module* to assess the performance of the municipality's PHC services[22].

In this study, we used only the part of the *VIGITEL evaluation module* made up of the PCATool-Adult-Brazil short version for PHC services users, translated into Portuguese and validated in Brazil[23]. This instrument consists of 23 items arranged in blocks of questions that correspond to the PHC attributes' performance evaluation (access, longitudinality, comprehensiveness, coordination, family orientation, and community orientation)[23].

PCATool is a PHC assessment tool developed in Baltimore, Maryland (USA), by Starfield et al. at The Johns Hopkins Populations Care Policy Center for the Underserved Populations and aims to measure the presence and extent of the PHC attributes[24]. It was built from the health service quality assessment model proposed by Donabedian[25], whose evaluation is based on the measurement of aspects of health services' structure, process, and results. The PCATool[11] proposes to measure the presence and extent of PHC attributes according to structure and process aspects. Empowered by statistical methods, the PCATool enables the association with the effectiveness of the actions and services provided and establishing associations with other clinical outcomes[26,27].

Responses to PCATool items use the Likert-type scale where the respondent specifies his level of agreement with the item, ranging from 1 to 4 for the analysis of each attribute (1 = certainly not; 2 = probably not; 3 = probably; 4 = certainly), with the addition of option 9 (I don't know/I don't remember)[11]. The values are transformed on a continuous scale, ranging from zero to ten (Chart 1)[11] after consolidating each attribute's data. The essential, derived, and general scores are calculated along with the score by attribute. We also calculated the standardized general score representing the cutoff point, considering the general score found (Chart 1)[11] to carry out the statistical analyses. A general score ≥ 6.6 shows a strong PHC orientation, equivalent to a value of 3 on the Likert scale (probably) and, consequently, a good quality of care (Chart 1)[11]. It is worth mentioning that the degree of affiliation aims to identify the professional or service that serves as a benchmark for the respondent and, therefore, is not considered a PHC attribute but is included in the calculation of essential and general scores[11].

A total of 2,125 interviews were conducted in the VIGITEL Belo Horizonte 2015 sample of the 3,800 telephone lines used (equivalent to 19 replicates of 200 telephone numbers each), in which 2,006 respondents reported having sought some health service when they needed care. Of these, 795 users answered the *VIGITEL evaluation module* (Figure 1). The study population consisted of adult PHC users who agreed to answer the *VIGITEL evaluation module*. The sample size was defined as 1,000 adults, obtained by the expression:

$$n = \frac{p \cdot (1-p)}{(d/z)^2}$$, where p=50%, z=1.96, and error margin of 3.1.

The sample obtained with the *VIGITEL evaluation module* was 795 interviews, and it was necessary to add five replicas with 200 phone

Chart 1. Description of PCATool score calculations.

Escore	Cálculo	Descrição
Standardized general score	$\frac{\text{(score-minimum score)*10}}{\text{maximum score-minimum score}}$	(1) if standardized general score ≥ 6.6 (0) if standardized general score < 6.6
General score	$\frac{A+B+C+D+E+F+G+H+I}{9}$	Sum of the degree of affiliation plus mean score of the components of the essential and derived attributes, divided by the total number of components
Essential score	$\frac{A+B+C+D+E+F+G}{7}$	Sum of the degree of affiliation plus mean score between the components of the attributes first contact (B), longitudinality (C), coordination (D and E) and comprehensiveness available (F), of the services provided (G), added to the degree of affiliation (A)
Derived score	$\frac{H+I}{2}$	Sum of the mean of the attributes family approach (H) and community orientation (I)
Score by attribute	After consolidating the relative data of each attribute, the values are transformed on a continuous scale, ranging from zero (0) to ten (10) given by the expression [score obtained – 1 (minimum value)] X 10/4 (maximum value) – 1 (minimum value)	(A) affiliation (B) use (C) attendance (D) care coordination (E) information coordination (F) comprehensiveness available (G) comprehensiveness provided (H) family approach (I) community orientation

Note: The degree of affiliation aims to identify the service or health professional (doctor/nurse) that serves as a reference for care, which is not considered an attribute of PHC but is used in the calculation of essential and general scores.

numbers each, totaling 1,000 phone numbers, to reach the minimum size defined by the sample calculation. Of these, another 118 adults were interviewed, who answered the short version of the questionnaire of VIGITEL and the *VIGITEL evaluation module*, thus totaling 913 interviews. Forty-one interviews were excluded due to the impossibility of locating the address of the PHC Unit (UBS) that the respondent said he used (Figure 1).

Thus, the population of this study consists of adults over 18 living in households served by at least one landline in Belo Horizonte, who used the PHC services in the city of Belo Horizonte in the last 12 months before the interview with identified UBS address and who agreed to answer the *VIGITEL evaluation module* (n = 872) (Figure 1).

Post-stratification procedures calculated using the rake method to expand the sample to the total population were applied to reduce the sample selection bias of the VIGITEL Belo Horizonte 2015 that interviews adults with a landline. Details on the sample design of the VIGITEL survey and post-stratification process have been described in other publications[18,28].

New post-stratification weights were calculated to adjust PHC users' distribution by age, gender, and schooling. These weights were calculated using the Data Analysis and Statistical Software (STATA) version 14.0 using the SURVWGT package and adopting the rake method and estimating the PHC user population obtained from the *VIGITEL evaluation module* as a reference population[29,30].

A descriptive analysis of the variables was performed using absolute and relative frequencies to characterize Belo Horizonte PHC service users. Then, Pearson's χ^2 test was used to identify associations, with a significance level of 5%.

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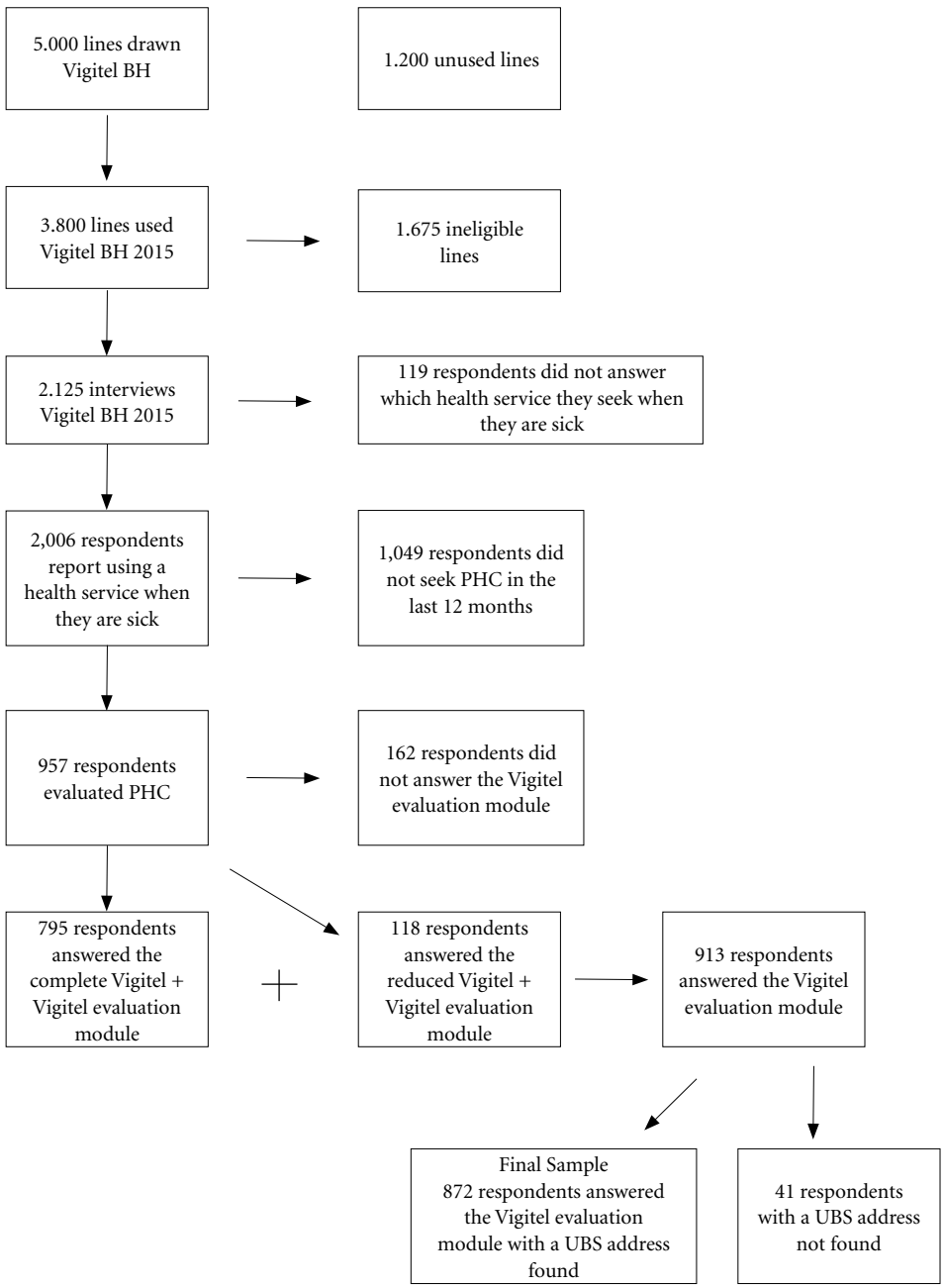

Figure 1. Sample flow of the study of the analysis of the performance of PHC services from the user's perspective. Belo Horizonte, Brazil. Vigitel, 2015.

The outcome variable of this study (extracted from the *VIGITEL evaluation module*) was the standardized general score (if ≥ 6.6 or < 6.6). The explanatory variables (extracted from the VIGITEL questionnaire) can be described in three groups. The first one is the sociodemographic

characteristics where we analyzed the variables gender (male; female), age group (in years: 18-29; 30-39; 40-59; 60 and over), schooling (years of study: 0-8, 9-11; 12 and over), ethnicity/skin color (white, black, yellow, brown, and indigenous), marital status (with or without a partner) and having a health insurance plan (yes or no). The second group considers the behavioral risk factors for the selected NCDs where the variables of tobacco use (yes or no) were selected, that is, the respondents who declared themselves smokers regardless of the number of cigarettes, the frequency, and duration of the habit of smoking and alcohol abuse (yes or no). In this last risk factor, we considered the respondent who reported consuming five or more doses (man) or four or more doses (woman) on a single occasion, at least once in the last 30 days. The third group analyzes self-reported health conditions such as the report of a previous medical diagnosis of diabetes, arterial hypertension, obesity (BMI ≥ 30 kg/m^2, calculated from self-reported weight and height).

The multiple logistic regression model was used to estimate the crude OR adjusted for gender and age and the respective confidence intervals (CI) of 95 % to analyze the association of interest between PHC score and the explanatory variables. All analyses were performed using the Survey module available in Data Analysis and Statistical Software (STATA) version 14.0 to incorporate VIGITEL data weighting.

VIGITEL was approved by the National Research Ethics Committee (CONEP), and the research was approved by the Research Ethics Committee of UnB's Medical School (CEP/FM/UnB). Given the nature of the interviews, the informed consent form was replaced by verbal consent obtained during telephone contacts with the respondents.

Results

When asked about using PHC services in the last 12 months, 872 users of the 2,125 interviewed in 2015 in Belo Horizonte responded positively (41.04%). Most of the 872 respondents who evaluated PHC are women (69.38%), older adults (44.04%), self-declared brown (44.06%), with health insurance (51.61%), with less than 11 years of study (69.38%), of which 38.88% have less than eight years of study. Regarding the self-reported health situation and risk factors for NCDs, 41.74% are hypertensive, 13.19% diabetic, 20.51% are obese, 8.03% are smokers, and 10.44% reported alcohol abuse.

In assessing the presence and extent of PHC attributes, according to the general score obtained, 19.61% (n = 171) of users evaluated with a score ≥ 6.6, and 80.39% (n = 701) gave a score < 6.6 (Table 1).

Table 1 describes the profile of users of PHC services, according to the general assessment score. We observed that most of those who best evaluated PHC (score ≥ 6.6) have low schooling, i.e., ≤ 8 years of study (27.08%; 95% CI 21.72-33.20) and have no health insurance (28.85%; 95% CI 23.96-34.28). Those who rated negatively are more educated adults, with 12 or more years of study (89.29%; 95% CI 82.74-93.55) and adults with health insurance (88.93%; 95% CI 84.94-91.96).

Table 2 shows PHC service users' assessment, according to behavioral risk factors for NCDs and self-reported health conditions. We observed that hypertensive (26.59%; 95% CI 21.33-32.60), diabetic (32.94%; 95% CI 23.11-44.52) and obese (31.23%; 95% CI 23.16-40.64) users are among those who best evaluated PHC (score ≥ 6.6).

Table 3 shows the result found in the application of the multiple logistic regression model. In the crude model, we can see that users without health insurance are 3.26 more likely (95% CI 2.11-5.03) to report a high score (≥ 6.6) for PHC quality than the others. Less educated, that is, with less than eight years of study (95% CI 1.66-5.79), obese (95% CI 1.28-3.57), diabetic (95% CI 1.14-3.57), and hypertensive users (95% CI 1.14-2.53) are 3.10, 2.04, 2.08, and 1.70 more likely to report a high score, respectively. =

In the model adjusted for confounding variables (age and gender), users without health insurance are 3.21 more likely (95% CI 2.08-4.96) to report a high score (≥ 6.6) for PHC quality than adults with health insurance, while less educated users (0-8 years of study) are 2.81 more likely (95% CI 1.48-5.32) to report high scores (Table 3). Considering self-reported health conditions, people with diabetes (95% CI 1.05-3.24) and obese individuals (95% CI 1.20-3, 24) are 1.84 and 1.97 more likely to report a high score, respectively. Regarding the age group, older adults (over 60 years old) are 1.19 more likely (95% CI 1.00-1.41) to report a high score for PHC quality than adults in other age groups. The outcome "arterial hypertension" lost statistical significance (p = 0.095) and did not show any difference after applying the adjusted model (Table 3).

Table 1. Characterization of adult users of Primary Health Care services in the last 12 months, according to sociodemographic characteristics and assessment scores. Vigitel, Belo Horizonte, 2015. (n = 872).

Variables	Score ≥6,6[a] n= 171			Score <6,6[b] n= 701			P-value[d]
	%[c]	CI 95%[d]		%[c]	CI95%[d]		
Gender							0.225
Male	23.27	17.77	29.85	76.73	70.15	82.23	
Female	18.96	15.44	23.07	81.04	76.93	84.56	
Age group (years)							0.181
18-29	14.26	8.30	23.42	85.74	76.58	91.70	
30-39	18.08	11.27	27.73	81.92	72.27	88.73	
40-59	22.00	16.75	28.34	78.00	71.66	83.25	
60 and over	24.86	19.80	30.70	75.14	69.30	80.20	
Schooling (years of study)							0.001
12 and over	10.71	6.45	17.26	89.29	82.74	93.55	
9-11	18.83	14.27	24.42	81.17	75.58	85.73	
0-8	27.08	21.72	33.20	72.92	66.80	78.28	
Ethnicity/skin color*							0.349
White	18.89	14.17	24.73	81.11	75.27	85.83	
Black	18.77	11.96	28.21	81.23	71.79	88.04	
Yellow	11.04	3.16	32.05	88.96	67.95	96.84	
Brown	23.95	18.94	29.81	76.05	70.19	81.06	
Indigenous	8.90	1.17	44.67	91.10	55.33	98.83	
Marital status							0.199
With partner	22.47	18.25	27.34	77.53	72.66	81.75	
Without partner	18.18	14.01	23.27	81.82	76.73	85.99	
Health insurance plan							0.000
Yes	11.07	8.04	15.06	88.93	84.94	91.96	
No	28.85	23.96	34.28	71.15	65.72	76.04	

(a) n=171 (b) n=701 (c) Weighted percentage to adjust the sociodemographic distribution of the Vigitel sample to the distribution of the adult population in BH (d) P-value of Pearson's $\chi 2$ test (score ≥ 6.6 and score <6.6). (d) 95% CI: 95% confidence interval. Note: Categorization of Vigitel 2015 respondents who answered the PHC evaluation module of items related to PCATool-Brazil-Adult short version and with address found.

Discussion

The population-based study built on telephone interviews presents the evaluation of PHC service performance from the perspective of users in Belo Horizonte, using the PCATool-Brasil short version[23].

The study innovates by applying the PCATool to a population sample in Belo Horizonte by telephone interviews to assess PHC performance and its association with sociodemographic characteristics, self-reported health conditions, and behavioral risk factors for NCDs, which differs from most published studies. It identifies the score of evaluation of the attributes from the users' viewpoint and knowing the PHC service use profile and factors associated with use[20,31]. It is worth mentioning that studies that apply the PCATool and analyze the score obtained with the users' lifestyles and morbidity are still scarce in the country.

The analysis using the multiple logistic regression model showed that the general score was better evaluated by PHC service users and associated with elderly users (aged 60 and over), with low schooling, without a health insurance plan, and with behavioral risk factors for NCDs or self-reported diseases, such as diabetes and obesity.

Considering the instrument chosen in this study to assess the performance of PHC services in Belo Horizonte, in a systematic global review,

Table 2. Characterization of adult users of Primary Health Care services in the last 12 months. according to behavioral risk factors for Chronic Noncommunicable Diseases. Self-reported health conditions and assessment scores. Vigitel. Belo Horizonte. 2015.

Variables	Score >=6,6[a] n= 171			Score <6,6[b] n= 701			P-value[d]
	%[c]	CI 95%[d]		%[c]	CI95%[d]		
Tobacco use							0.143
Yes	29.98	17.22	46.85	70.02	53.15	82.78	
No	19.72	16.64	23.22	80.28	76.78	83.36	
Alcohol abuse							0.396
Yes	16.24	8.51	28.77	83.76	71.23	91.49	
No	21.22	17.96	24.89	78.78	75.11	82.04	
Arterial Hypertension							0.009
Yes	26.59	21.33	32.60	73.41	67.40	78.67	
No	17.60	13.96	21.94	82.40	78.05	86.04	
Diabetes							0.007
Yes	32.94	23.11	44.52	67.06	55.48	76.89	
No	19.07	15.88	22.72	80.93	77.28	84.12	
Obesity							0.003
Yes	31.23	23.16	40.64	68.77	59.36	76.84	
No	18.44	15.21	22.18	81.56	77.82	84.79	

(a) n = 171 (b) n = 701 (c) Weighted percentage to adjust the sociodemographic distribution of the Vigitel sample to the distribution of the adult population in BH (d) P-value of Pearson's χ^2 test (score ≥ 6.6 and score < 6.6). (d) 95% CI: 95% confidence interval.
Note: Categorization of Vigitel 2015 respondents who answered the PHC evaluation module of items related to PCATool-Brazil-Adult short version and with address found (n = 872).

Prates et al.[32] searched for studies published from 2007 to 2015 on using the PCATool instrument from the user's perspective for the evaluation of PHC performance. They found that several countries used PCATool, such as Canada, Spain, Korea, and China. However, studies evaluating PHC from the perspective of users in Brazil are still scarce[32,33].

The results indicate a predominance of older adults who best evaluated PHC (score ≥ 6.6). Evidence points out that older adults have more multimorbidity and consequently use health services more, especially PHC, for individual or group care, or even for the purchase of medications, thus creating a bond with the service and the teams, facilitating better care assessment[17,20,34,35]. In a household survey to analyze the pattern of use of health services by older adults in public services in Guarapuava, state of Paraná, Pilger et al.[36] concluded that this population is a large user of health services. Dotto et al.[37] evaluated the orientation of PHC services and compared the quality of PHC between UBS and Family Health Units (FHU), according to older adults' use experience, by employing the PCATool, in two districts of Porto Alegre, Rio Grande do Sul. They identified that most older adults (77.9%) used the UBS services and, regarding the quality of the services, they observed that 22.9% of older adults evaluated PHC with a high-quality score[34].

Users with low education and without a health insurance plan also evaluated PHC services better, corroborating with other studies that indicate that less-educated people and without health insurance plan use PHC services more, as these are mostly dependent on the SUS[20]. PNS data showed that ESF coverage is higher among people with low schooling. It is worth mentioning that the results found show the potential of the PHC services' contribution to reducing health inequalities, promoting greater access to health care[15,31,38,39]. However, the study by Perillo et al.[20] records that 45.22% of users with health insurance also used PHC services, which reinforces the scope of these services.

The study by Augusto et al.[40] shows that older adults without a private health insurance plan living in the Metropolitan Region of Belo Horizon-

Table 3. Factors associated with assessment with a score ≥ 6.6 by users of Primary Health Care services. Belo Horizonte. Vigitel. 2015.

Variables	Crude model				Adjusted model			
	OR[a] (crude)	CI[b] (95%)		p-value[c]	OR[d] (ajusted)	CI[b] (95%)		p-value[c]
Gender[e]								
Male	1.00				1.00			
Female	0.77	0.51	1.17	0.226	0.77	0.51	1.18	0.236
Age group (years)[f]								
18-29	1.00				1.00			
30-39	1.33	0.58	3.02	0.499	1.37	0.60	3.13	0.461
40-59	1.19	0.95	1.50	0.137	1.20	0.95	1.52	0.125
60 and over	1.19	1.00	1.41	0.046	1.19	1.00	1.41	0.048
Schooling (years of study)								
12 and over	1.00				1.00			
9-11	1.93	1.01	3.69	0.045	2.00	1.03	3.89	0.042
0-8	3.10	1.66	5.79	0.000	2.81	1.48	5.32	0.002
Ethnicity/skin color[f]								
White	1.00				1.00			
Black	1.03	0.55	1.91	0.936	1.10	0.58	2.07	0.775
Yellow	0.55	0.14	2.18	0.395	0.66	0.17	2.59	0.549
Brown	1.40	0.90	2.18	0.137	1.42	0.91	2.21	0.126
Indigenous	0.43	0.05	3.67	0.443	0.42	0.05	3.69	0.435
Marital status								
With partner	1.00				1.00			
Without partner	1.26	0.84	1.89	0.265	1.03	0.64	1.66	0.894
Health insurance plan								
Yes	1.00				1.00			
No	3.26	2.11	5.03	0.000	3.21	2.08	4.96	0.000
Tobacco use								
No	1.00				1.00			
Yes	1.74	0.82	3.69	0.147	1.69	0.80	3.56	0.169
Alcohol abuse								
No	1.00				1.00			
Yes	0.72	0.34	1.54	0.397	0.71	0.33	1.52	0.378
Arterial Hypertension								
No	1.00				1.00			
Yes	1.70	1.14	2.53	0.010	1.49	0.93	2.40	0.095
Diabetes								
No	1.00				1.00			
Yes	2.08	1.22	3.57	0.008	1.84	1.05	3.24	0.034
Obesity								
No	1.00				1.00			
Yes	2.04	1.28	3.27	0.003	1.97	1.20	3.24	0.007

(a) OR: Odds Ratio. (b) 95% CI: 95% confidence interval. (c) Statistically significant p-value: p <0.05. (d) Adjusted OR = Odds ratio adjusted for gender and age.
(e) OR adjusted for age. (f) OR adjusted for gender.
Note: Crude Odds Ratio, their respective 95% CI, and statistical significance (p-value) were estimated by logistic regression models (crude and adjusted).

te showed a better evaluation in the attributes of care coordination, first contact access, and comprehensiveness, and a worse evaluation in community orientation. It also observed that very old

adults, women, and higher education rated the service better. Those who reported greater use of the service and chronic conditions had a worse assessment of PHC. The authors concluded that worse health conditions and greater use of services are associated with a more negative perception of PHC attributes among older adults[40].

Araújo et al.[41] evaluated the quality of PHC care provided to older adults according to their perspective in a municipality in the metropolitan region of Natal (RN) and identified that the sociodemographic factors linked to vulnerability (lower-income, rural area, and older age) were positively associated with different attributes of PHC.

The positive evaluation of users with NCDs, such as diabetes and obesity, shows that PHC services play a fundamental role in NCD surveillance and monitoring risk factors since they seek to develop activities to prevent these diseases, promote health, and implement harm reduction. These users require continuous monitoring, should address complications with specialists, and obtain supplies. PHC plays an important role in articulating the points of care of the RAS, ensuring the principles of comprehensiveness and care coordination.

A study by Sala et al.[42] that evaluates the comprehensiveness attribute in PHC services from the perspective of users of health units in São Paulo showed a very favorable evaluation in the issue of the gateway, list of services, and coordination.

Nevertheless, it is worth emphasizing the importance of investments to strengthen PHC to reduce NCDs[7,43] effectively.

Studies indicate that the best assessment of diabetic users of PHC services may be related to these users' low individual demand. Also, a feeling of gratitude could prevent users from evaluating the services received more critically for fear of weakening the bond with the health team and limiting access to the care received or the purchase of supplies[44].

A limitation of this study refers to a possible selection bias from the use of the landline telephone register, minimized with the use of weighting and post-stratification weights, adjusting the sample composition to the demographic features of the municipality's population. Choosing the PCATool-adult-Brazil short version from the user's perspective has known limitations. The first would be to use only the experience of the actors involved (in the case of this study, users) in care as an evaluation criterion, not incorporating, for example, the technical evaluation of the service provided. However, considering that the opinion of users of PHC services is important in the evaluation process of the service and that the telephone survey can be useful in collecting data and is a low-cost process, further studies can be carried out with the evaluation of healthcare professionals to complement the assessment. The second points out a limitation regarding the fact that this instrument was not developed for the analysis of scores by attribute and measured the presence and extent of the essential and derived attributes of PHC through the general score. However, the feasibility of using the full version or analyzing the short version for use in telephone surveys must be considered. Evaluation becomes an important instrument for decision-making by professionals, managers, and academics[45-48], and should be incorporated into management, especially the local one.

This study presents a new possibility of using the evaluation of health services, especially PHC, through the telephone survey, which can be a proper monitoring strategy, capturing users' perspective, at a lower cost and faster. Also, the PCATool-Brazil instrument is important in evaluating the quality of PHC services, considering the structural and process aspects in health services and facilitating associations with clinical outcomes.

Conclusion

The study innovates by using PCATool in a telephone survey and was useful in assessing the performance of PHC in Belo Horizonte from the perspective of users and its association with sociodemographic features, self-reported conditions, and behavioral risk factors for NCDs. Further studies are required to assess PHC performance from the user's perspective and present an analysis relating PHC performance assessment to clinical outcomes. The study proved that this is an innovative type of assessment that can be replicated nationwide and contribute to the management of services. It also has a negligible cost and can be rapidly applied. It allows comparability of the findings as it is a tool used worldwide with different versions validated for local contexts.

Collaborations

RD Perillo and DC Malta worked on the study design, the writing of the paper, the analysis and interpretation of data, the literature review, and the final review of the text. RTI Bernal and KC Poças participated in the design of the study, in the analysis and interpretation of data, and the final review of the text. EC Duarte participated in the design of the study and the final review of the text. All authors approved the final version.

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Erratum

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which reads

ARTICLE

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FREE THEMES

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