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An evaluation of Primary Health Care from the users' perspective: reflections on the usage of the Primary Care Assessment Tool-Brazil in telephone surveys

Avaliação da Atenção Primária à Saúde na ótica dos usuários: reflexões sobre o uso do Primary Care Assessment Tool-Brasil versão reduzida nos inquéritos telefônicos

Rosângela Durso Perillo[I] (ID), Regina Tomie Ivata Bernal[I] (ID), Kátia Crestine Poças[II] (ID), Elisabeth Carmen Duarte[II] (ID), Deborah Carvalho Malta[III] (ID)

ABSTRACT: *Objective*: To evaluate the attributes of PHC from the perspective of users, interviewed in a telephone survey in Belo Horizonte. *Methods*: Cross-sectional population-based study. Data from Vigitel 2015 that included an additional module on PHC assessment were used. A reduced version of PCATool-Brasil with adaptations was used. *Results*: We interviewed 872 users and there was a predominance of women, older adults, adults with low levels of education, those without a partner, those who described themselves as brown, and those without health insurance. The overall score of the Vigitel assessment was 5.48 (95%CI 5.35 – 5.61) and the reduced PCATool was 5.01 (95%CI 4.86 – 5.15). In both instruments, the scores of the attributes first contact (utilization), longitudinality, and coordination (care) were higher than the general score with the highest value (5.48). The mean score of the first contact attribute (utilization) was the highest rated by users considering the Vigitel assessment instrument (7.09; 95%CI 6.93 – 7.26). In general, the evaluations of the instruments are coinciding, but the attributes first contact (utilization), completeness (available services) and coordination (information system) presented better mean scores in the Vigitel evaluation instrument when compared to the reduced PCATool. There was no difference in the evaluation according to Regional Health. *Conclusion*: The use of the reduced version of the PCATool in a telephone survey and with small adaptations to the local reality, showed a new possibility for the evaluation of PHC services, and may become useful in the management of health services.

Keywords: Primary health care. Evaluation of health services. Health services. Health surveys.

[I]Graduate Program in Nursing, School of Nursing, Universidade Federal de Minas Gerais – Belo Horizonte (MG), Brazil.
[II]School of Medicine, Field of Social Medicine, Universidade de Brasília – Brasília (DF), Brazil.
[III]Department of Nursing for Mothers and Children and Public Health, School of Nursing, Universidade Federal de Minas Gerais – Belo Horizonte (MG), Brazil.
Corresponding author: Rosangela Durso Perillo. Rua Engenheiro Aloísio Rocha, 212, 302, CEP: 30575-260, Belo Horizonte, MG, Brazil. E-mail: rosangeladurso.perillo@gmail.com

RESUMO: *Objetivo*: Avaliar os atributos da atenção primária à saúde (APS) na ótica dos usuários entrevistados em inquérito telefônico, em Belo Horizonte. *Métodos*: Estudo transversal de base populacional, com dados do Sistema de Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico (Vigitel) 2015, que incluiu um módulo adicional sobre a avaliação da APS. Utilizou-se o *Primary Care Assessment Tool* (PCATool-Brasil) em versão reduzida, com adaptações. *Resultados*: Entrevistaram-se 872 usuários, com o predomínio de mulheres, adultos de maior idade, com baixa escolaridade, sem companheiro, que se autodeclaram de cor parda e não possuem plano de saúde. O escore geral do Vigitel avaliação foi 5,48 (intervalo de confiança — IC95% 5,35 – 5,61) e do PCATool reduzido 5,01 (IC95% 4,86 – 5,15). Em ambos os instrumentos, os escores dos atributos primeiro contato (utilização), longitudinalidade e coordenação (cuidado) se apresentaram superiores ao escore geral de maior valor (5,48). O escore médio do atributo primeiro contato (utilização) foi o mais bem avaliado pelos usuários, considerando o instrumento Vigitel avaliação (7,09; IC95% 6,93 – 7,26). De modo geral, as avaliações dos instrumentos são coincidentes, porém os atributos primeiro contato (utilização), integralidade (serviços disponíveis) e coordenação (sistema de informação) apresentaram melhores escores médios no instrumento Vigitel avaliação, quando comparado ao PCATool reduzido. Não houve diferença na avaliação segundo regional de saúde. *Conclusão*: A utilização do PCATool na versão reduzida em inquérito telefônico e com pequenas adaptações à realidade local mostrou-se nova possibilidade de avaliação dos serviços da APS e pode se tornar útil na gestão dos serviços de saúde.

Palavras-chave: Atenção primária à saúde. Avaliação de serviços de saúde. Serviços de saúde. Inquéritos epidemiológicos. Entrevista por telefone.

INTRODUCTION

Primary Health Care (PHC) proposed at the Alma-Ata Conference was defined as an integral part of the health system, and it represents an individual's first contact with the system. It should function as the preferred gateway and connect to the other levels of care, thus composing the Health Care Network (*Rede de Atenção à Saúde* - RAS) in a hierarchical, integrated, problem solving manner and under a defined geographic base[1].

In Brazil, the Family Health Strategy (FHS) is a priority for strengthening PHC, in order to reaffirm universal access and equity in care. A robust PHC is important to face the crisis that the Public Health System (*Sistema Único de Saúde* - SUS) is going through as a result of liberal policies, a model that favors high-intensity technologies and restricted rights[2].

According to Starfield[1], a strong PHC must have structural elements such as first contact, longitudinality, completeness and coordination of care, as well as derived elements, such as family and community guidance.

PHC in Brazil, in the last decade, has undergone a great expansion, going from coverage of 50.9% (2008) to 74.65% (October 2019)[3,4]. Nevertheless, a great challenge remains to improve the quality of services and increase users and professionals' satisfaction.

With the idea of establishing a culture of evaluation and intervention, the Ministry of Health, in 2011, instituted the National Program for Improving Access and Quality in Primary Care (*Programa Nacional de Melhoria do Acesso e da Qualidade da Atenção Básica* - PMAQ-AB) to incentivize managers and teams be trained on services, and work appropriately[5]. Despite

the discontinuation of the program in 2019, the results it presented were important for the improvement of PHC services.

Another evaluation instrument used in Brazil consists of the *Primary Care Assessment Tool* (PCATool), as presented by Fracolli et al.[6] in a literature review on the main PHC assessment instruments. The adult version of the PCATool-Brasil[7] is an instrument that is composed of groups of questions regarding the attributes of PHC (first contact, longitudinality, completeness, coordination, family and community guidance). The full version of the instrument was translated and validated in Brazil (88 items)[8] and so was a reduced version (23 items)[9].

In view of the importance of evaluating services to strengthen PHC, the Ministry of Health, in 2015 added a pilot module to the Surveillance System for Risk and Protection Factors for Chronic Diseases by Telephone Survey (*Sistema de Vigilância de Fatores de Risco e Proteção para Doenças Crônicas por Inquérito Telefônico - Vigitel*) an evaluation of PHC in two Brazilian capital cities (Belo Horizonte and Brasília), in order to find a new way of evaluating services[10]. It partnered with researchers from the Universidade Federal de Minas Gerais (UFMG) and the Universidade de Brasília (UnB) in the development of this module.

It is known that population health surveys have been increasingly used, not only to obtain information on the referred morbidity and lifestyles of the population, but also to evaluate how services function from the user's point of view, allowing for a good opportunity to carry out the PHC assessment[11].

Thus, this study presents some reflections on the assessment of PHC performance, using the reduced version of PCATool-Brasil for users, in telephone surveys. Thus, our objective was to evaluate the attributes of PHC from the perspective of adult users interviewed by telephone in Belo Horizonte.

METHODS

A cross-sectional population-based study with a descriptive character was carried out in 2015 with data from Vigitel[12].

The study was carried out in the city of Belo Horizonte, capital of Minas Gerais, which has 2,375,151 inhabitants. The municipality is divided into nine health regions that correspond to the administrative-assistance organization of the Municipal Health Department. The FHS was implemented in the municipality in 2002, and in 2017, the city covered 80.38% of the population.

Vigitel conducts annual interviews with the adult population of Brazilian capital cities and the Federal District, using landline telephone sampling. Telephone interviews were conducted by a specialized company[12]. The training of the team responsible for the interviews was carried out by researchers from UFMG and UnB, and technicians from the Health Surveillance Secretariat/Ministry of Health.

From the Vigitel BH sample, respondents were selected who would be eligible to respond to the instrument used in the PHC assessment module, which assesses the presence and extent of PHC attributes from the user's perspective. Thus, the interviewees initially answered

the items related to the risk and protection factors for Chronic Noncommunicable Diseases (NCDs) related to the Vigitel survey. They then answered questions related to the use of health services and PHC in the past 12 months. Respondents who declared themselves users of the PHS were then invited to participate in this study, and responded to the *PHC evaluation module*.

This module, specific about the use of health services and the evaluation of PHC attributes in the municipalities of Belo Horizonte, used the reduced version of the PCATool-Brasil as a basis.

The instrument used in this research was developed with the idea of complementing the reduced PCATool with questions of interest for analysis in the face of particularities related to the cities' coverage, and different PHC service arrangements in the two selected cities. For this, 11 items were added, eight of them were extracted from the PCATool-BRASIL (full adult version) and three were taken from the instrument used in the external evaluation stage of the PMAQ-AB[13]. The items that were added to the reduced version of the PCATool-Brasil include practically all the attributes of PHC, with the exception of longitudinality, coordination (care) and completeness (services provided), which kept the components of the original reduced version (Table 1).

Table 1. Description of items added in the Risk Factor Surveillance System evaluation module by Telephone Survey (Vigitel), Belo Horizonte, 2015[θ].

PHC attributes	Items	Description of items
Affiliation[a]		Reduced PCATool items
First contact[a] (Use)	(*)	Opening hours meet your needs
	(**)	The location meets your needs
	(*)	Open at lunchtime (12 to 2 pm)
First contact[a] (Access)	(**)	Open at least one day until 8 pm
	(*)	Welcomed/attended by a professional
Longitudinality[a]		Reduced PCATool items
Coordination[a]		Reduced PCATool items
Completeness[a] (Available services)	(**)	Vaccine (Immunization)
	(**)	Preventive examination for cervical cancer
Completeness[a] (Services rendered)	(**)	Advice on getting enough sleep
Family guidance[a]	(**)	Common illnesses/problems that may occur in your family
Community guidance	(**)	Home Visits
	(**)	Community research on how to improve services

[θ]The Vigitel 2015 Primary Health Care (PHC) evaluation module consists of the 23 items of the reduced PCATool distributed in all attributes, plus the 11 items listed in the table; [a]includes items from the Primary Care Assessment Tool (PCATool); *items from the National Program for Improving Access and Quality in Primary Care (PMAQ); **PCATool full version items included.

Interview data were analyzed by comparing the results of the scores obtained using the instrument of this study (Vigitel evaluation score) and those obtained using the reduced version of the PCATool (reduced PCATool score).

Initially, 5,000 landlines were randomly selected and 3,800 were contacted, 1,695 of whom were considered ineligible (they had commercial lines or lines that did not respond to any of the six call attempts). Thus, 2,125 interviews were conducted, in which 2,006 respondents reported having sought some health service when they needed assistance. When asked if they had used the PHC in the last 12 months, 957 users responded positively. Of these, 162 did not agree to answer the PHC evaluation module.

With the goal of expanding the sample, for this study, new phone lines were drawn and 118 more adults were interviewed. They answered a reduced questionnaire from Vigitel. This instrument contained selected items about sociodemographic conditions, self-reported health conditions and behavioral risk factors for NCDs, in addition to the *PHC evaluation module*. Thus, there were 913 interviews with adults, who reported using PHC services. A total of 41 interviews were excluded because it was impossible to locate the Basic Health Unit (BHU) address which the interviewee said he or she used. Thus, the population of this study was 872 respondents.

The data collected from Vigitel's interviews use probabilistic samples from the adult population, based on the registration of residential landline lines. To match the sociodemographic distributions of the sample to the estimated distribution for the total population of 2015, after collection, the data were weighted and went through post-stratification weight procedures calculated by the *rake method*. During the weighting, the inverse of the number of telephone lines in the household, the number of individuals in the household and the post-stratification weight were considered, which were constituted according to the characteristics of sex, age and education of the sample and the total population of the municipality. Bernal et al.[14] describe in detail the sample design of Vigitel.

The sample used in this study also underwent other post-stratification procedures. The variables age, sex and education were used in their calculation, so that the sociodemographic distribution of Vigitel was equal to the distribution of the adult population of Belo Horizonte.

The study variables can be divided into three groups:

- score (extracted from the *PHC assessment module)*: The score calculation refers to the responses of each item (component) that forms the respective attributes.
- sociodemographic characteristics (extracted from the Vigitel questionnaire):
  - sex (male; female);
  - age group (in years: 18–29; 30–39; 40–59; 60 or older);
  - education (years of study: 0 to 8; 9 to 11; 12 or more);
  - race / color (white; black, yellow; brown; indigenous);
  - marital status (partner or no partner);
  - has health insurance (yes or no).
- location of the BHU used in the last 12 months according to the health region to which it belongs (extracted from the *PHC evaluation module*).

Before answering the items related to the PHC assessment, two open-ended questions were asked in order to identify the BHU to which the user was referring to at the time of the assessment. They were: You replied that you sought care in the last 12 months, at a BHU (either at a health clinic or at the health center or at the family health unit) to take care of your own health. Do you confirm this information?; and If so, which BHUs have you visited in the past 12 months?

Initially, a descriptive analysis of the sociodemographic variables was performed using absolute and relative frequencies. In a second step, the average scores for each attribute were calculated with 95% confidence intervals. The scores obtained were described considering the items of the reduced PCATool and comparing them to the scores obtained through the items of the instrument used in the *PHC evaluation module*. And, thirdly, the scores obtained were considered using the regional scores of Belo Horizonte.

The scores were calculated based on the responses to the items that used the Likert-type scale, in which the respondent specifies his level of agreement with the item presented, and the responses are arranged from 1 to 4 (1 = definitely not; 2 = probably not; 3 = probably yes; 4 = definitely yes). After consolidating the data for each attribute, the values are transformed on a continuous scale, varying between zero and ten, as shown in Equation 1:

$$[\text{score obtained - 1 (minimum value)}] \times 10 / 4 \text{ (maximum value) - 1 (minimum value)} \quad (1)$$

In addition to calculating the score by attribute, the essential score was also calculated. The essential score is the sum of the average between the components of the first contact attributes, longitudinality, coordination and completeness, added to the degree of affiliation. The score derived was obtained by means of the family guidance and community guidance attributes. Finally, the general score was obtained by the average value of the essential scores, the derivatives and the degree of affiliation. It is worth mentioning that the degree of affiliation aims to identify the health professional or service that serves as a reference for the interviewee and, therefore, is not considered an attribute of PHC, but is included in the calculation of essential and general scores[7]. A general score ≥ 6.6 indicates that there is a strong orientation to PHC.

All analyzes were performed using the *Survey* module available in Data Analysis and Statistical Softwares (STATA) version 14.0, so that it was possible to incorporate the weighting of Vigitel data and the *PHC evaluation module*.

Vigitel was approved by the National Research Ethics Commission (CONEP), report No. 355,590, of June 26, 2013, and the research was approved by the Research Ethics Committee of the School of Medicine of UnB (CEP/FM/UnB), under report No. 089/12, of May 5, 2013. Given the nature of the interviews, free and informed consent was replaced by verbal consent obtained during telephone contacts with the interviewees.

RESULTS

Among the 2,125 interviewed in 2015 in Belo Horizonte, the frequency of using PHC services in the last 12 months, with a findable address, was 41.04% (n = 872).

Table 2 shows the sociodemographic characteristics of the interviewees, of which 63.14% (confidence interval - 95%CI 58.94 - 67.2) were female.

Table 2. Characterization of adults who have used Primary Health Care (PHC) services in the last 12 months. Risk Factor Surveillance System by Telephone Survey (Vigitel), Belo Horizonte, 2015**.

Variables	PHC users (n = 872)		
	%ᵃ	95%CI	
Sex			
Male	36.86	32.85	41.06
Female	63.14	58.94	67.15
Age range (years)			
18 to 29	20.27	16.64	24.45
30 to 39	18.03	14.87	21.69
40 to 59	32.92	29.26	36.79
60 or older	28.79	25.61	32.18
Education level (years of study)			
12 or more	19.41	16.55	22.63
9 to 11	40.62	26.60	44.77
0 to 8	39.97	36.00	44.07
Race/color*			
White	35.40	31.50	39.51
Black	14.87	12.00	18.29
Yellow	2.82	1.69	4.67
Brown	45.52	41.35	49.75
Indigenous	1.39	0.67	2.85
Marital status			
Partner	49.62	45.49	53.77
No partner	50.38	46.23	54.51
Health insurance			
Yes	46.77	42.70	50.88
No	53.23	49.12	57.30

ᵃWeighted frequency; 95%CI: 95% confidence interval; *values do not add up to 100% (*missing*); ** categorization of Vigitel 2015 respondents who responded to the PHC assessment module and had a findable address.

Regarding age group, those who sought services the most were older adults, that is, 32.92% were in the range of 40 to 59 years (95%CI 29.26 - 36.79), followed by 28.79% aged 60 and over (95%CI 25.61 - 32.18).

Adults with lower levels of education also used PHC services more, that is, ≤ 8 years of study (39.97%; 95%CI 36.00 - 44.07), in addition to those who declared themselves brown (45.52%; 95%CI 41.35 - 49.75), those who lived without a partner (50.38%; 95%CI 46.23 - 54.51) and those who did not have health insurance (53.23%; 95%CI 49.12 - 57.30) (Table 2).

Table 3 shows the general score obtained according to the location of the BHU that the user had accessed in the last 12 months. Considering the average of the scores obtained from the reduced PCATool at the units of each regional health unit, it was observed that only the units in the Northeast Region (5.77; 95%CI 5.06 - 6.48) had a higher score than the general score of the Vigitel evaluation module (5.48). However, when analyzing the general score of the regions with the data from the *PHC assessment module* of Vigitel, in the Northeast Region (6.17; 95%CI 5.55 - 6.78), North Region (5.70; 95%CI 5.33 - 6.07), West Region (5.57; 95%CI 5.10 - 6.05) and Pampulha Region (5.60; 95%CI 5.40 - 6.80), the scores were higher than the general scores of Belo Horizonte (5.48).

Table 4 shows the average scores obtained from the PHC attributes with a 95% confidence interval. The general score was calculated in two ways: based on the mean scores of the

Table 3. General score obtained in the evaluation of Primary Health Care (PHC), according to the location of the unit used by the user. Risk Factor Surveillance System by Telephone Survey (Vigitel), Belo Horizonte, 2015**.

BHU region used in the last 12 months	n	Vigitel General Score evaluation[a]		Reduced PCATool General Score[a]	
		Average	95%CI	Average	95%CI
Belo Horizonte	872	5.48	5.35 5.61	5.01	4.86 5.15
Barreiro Region	33	5.22	4.63 5.81	4.63	4.01 5.24
Center-South Region	30	4.63	3.84 5.42	4.14	3.14 5.14
East Region	23	4.91	4.20 5.63	4.38	3.61 5.14
Northeast Region	29	6.17	5.55 6.78	5.77	5.06 6.48
North Region	79	5.70	5.33 6.07	5.21	4.77 5.64
Northwest Region	29	4.78	4.03 5.54	4.35	3.56 5.14
Western Region	35	5.57	5.10 6.05	4.81	4.32 5.30
Pampulha Region	302	5.60	5.40 5.80	5.14	4.91 5.38
Venda Nova Region	395	5.40	5.16 5.64	4.95	4.68 5.21

[a]Weighted frequency. Standardized mean score (scale 0 to 10); 95%CI: 95% confidence interval; * categorization of Vigitel 2015 respondents who answered the PHC assessment module and their address was located (n = 872); BHU: Basic Health Unit; PCATool: *Primary Care Assessment Tool.*

reduced PCATool attributes (5.01; 95%CI 4.86 - 5.15); and the general score of the instrument adopted in this study (Vigitel evaluation score) based on Vigitel 2015 (5.48; 95%CI 5.35 - 5.61).

In both instruments, the attributes of first contact (use), longitudinality and coordination (care) presented higher means than the general score with the highest value (5.48). The first contact attribute (use) was the best evaluated by users, considering the Vigitel evaluation instrument (7.09; 95%CI 6.93 - 7.26). Thus, first contact was the only attribute that was considered to have a strong degree of service orientation in relation to PHC attributes (≥6.6). In contrast, the family guidance attribute was the one with the lowest score: in the reduced PCATool it obtained 4.39 (95%CI 4.13 - 4.65) and in the Vigitel evaluation 4.58 (95%CI 4.33 - 4.82) (Table 4).

DISCUSSION

This study analyzed data from the *PHC evaluation module* of Vigitel 2015. It showed the potential of using the telephone survey to assess PHC, with the use of the reduced PCATool.

Table 4. Average score obtained, by attribute, of Primary Health Care (PHC) from the users' perspective. Risk Factor Surveillance System by Telephone Survey (Vigitel), Belo Horizonte, 2015**.

PHC attributes	Score by attribute, Vigitel evaluation [a]			Score by attribute, reduced PCATool [a]		
	Average	95%CI		Average	95%CI	
Affiliation	4.67	4.42	4.92	4.67	4.42	4.92
First contact (use)	7.09	6.93	7.26	6.09	5.77	6.42
First contact (access)	4.73	4.54	4.91	4.51	4.25	4.77
Longitudinality	5.87	5.66	6.08	5.87	5.66	6.08
Coordination (care)	6.02	5.66	6.39	6.02	5.66	6.39
Coordination (information systems)	6.08	5.89	6.28	4.84	4.56	5.11
Completeness (available services)	6.06	5.89	6.23	4.91	4.71	5.12
Completeness (services provided)	5.31	5.10	5.52	5.31	5.10	5.52
Family guidance	4.58	4.33	4.82	4.24	3.99	4.49
Community guidance	4.87	4.67	5.07	4.39	4.13	4.65
Essential score[b]	5.68	5.55	5.81	5.51	5.37	5.65
Derived score[c]	4.70	4.55	4.86	4.43	4.25	4.61
General score[d]	5.48	5.35	5.61	5.01	4.86	5.15

[a]Weighted frequency. Standardized mean score (scale 0 to 10); [b]the essential score is the sum of the average of the scores of the following attributes: first contact, longitudinality, coordination and completeness, of the services provided added to the degree of affiliation; [c]the derived score is the sum of the mean scores of the following attributes: family guidance and community guidance; [d]the general score is the average value of the essential and derived scores and the degree of affiliation; 95%CI: 95% confidence interval; PCATool: Primary Care Assessment Tool.

The analysis showed that PHC users are mostly women, adults of older age, adults with low levels of education, those with no partner, those who declare themselves to be brown, and those that do not have health insurance. Several authors state that the use of health services is related to several factors, such as the perception of the disease, the users' need, the availability of the services offered, or even sociodemographic characteristics[15-18]. The greater use of PHC services by women may be related to their greater perception of health situations, and therefore, to their more likely search for prevention actions[14,19,20].

There were no differences in PHC assessment according to health regions. However, the overall score was 5.48 lower than expected, thus pointing to the need to search for alternatives to adjust work processes. This result differs from results obtained in the study by Turci et al.[21], held in Belo Horizonte, which analyzed the perception of health professionals and found an average score of 7.5. However, studies show that the evaluation performed by users tends to be more rigorous than that of managers and professionals[21,22].

With regard to attributes, the score of the first contact (use) attribute was the best evaluated by users, with an average value higher than the parameter (≥ 6.6). The attributes longitudinality, coordination and completeness (available services) had means that were higher than the general score found in the study (> 5.48).

According to Donabedian[23], the service evaluation should consider the following: the quality of structure component, which is related to the service characteristics, the process component, which is related to health professionals and populations' actions, and the results, which reflect the state of health achieved.

The PCATool allows for the evaluation of the structure and process components. The first contact (use) and completeness (services provided) attributes were related to the evaluation of the processes. In this sense, it was possible to observe that the first contact attribute (use) was also well evaluated in other studies, as well as the positive evaluation of the longitudinality, coordination and completeness attributes[22,24-28].

The first contact (access), community, and family guidance attributes had lower than expected average scores, which corroborates other studies[25,26,29] and reinforces the need for the development of public policies that seek greater involvement of the family and the community in the search for the right to citizenship and in improving quality of life. In studies carried out with health professionals, a lower score was also found for these attributes[21,24].

Regarding the low score found in family guidance, it is worth mentioning that this attribute involves the assessment of the individual's health needs and the relationship with the family environment. It also includes the availability of family resources, which are often limited. Notwithstanding, this attribute is also related to achieving good results in the context of coordinating integrative care, thus showing the complexity of how it is assessed[22].

Regarding the general score found in the reduced PCATool and in the instrument used in this study, both had a lower value than expected. However, it was observed that the instrument used in the evaluation module had a higher score. This finding indicates the importance of adapting the reduced PCATool instrument to the local characteristics of PHC services. It is suggested, for example, the possible inclusion of items that measure

the use of other forms of communication between the health team and users, with the use of applications on mobile devices or even by e-mail, which could contribute to expanding access and connection.

Another interesting aspect to be included in the PHC assessment is the team's use of telemedicine, which could enhance the attribute of care coordination. With regard to the coordination attribute (information system), there is still a need for investments in this area.

PHC services in Belo Horizonte use electronic medical records. However, unfortunately, this is not the reality in many municipalities, a fact that can hinder access to users' information. It is also necessary to integrate user information throughout the RAS, which would greatly facilitate the coordination of care.

Furthermore, the epidemiological transition with the increase in NCDs[16] and the problems related to violence suggests the need to include new items in the completeness attribute.

It is worth mentioning that the information system component was considered to be difficult for users to evaluate. Thus, other methodological approaches can complement an assessment of services with an analysis of the in depth understanding of the users' perception of PHC services.

A limitation of this study refers to a possible selection bias originating from the use of registered landline telephones, which was minimized with the use of weighting and post-stratification weights, adjusting the sample composition to the demographic characteristics of the municipality's population.

With regard to the use of the reduced version of PCATool for users, there was a limitation in that it was not developed to analyze scores by attribute, and was only able to measure the presence and extent of the essential and derived attributes of the PHC through the general score. However, the feasibility of using the full version or even making adaptations to the reduced version for use in telephone surveys must be taken into account.

Another aspect to be considered is the sample size when it is intended to calculate the scores using the PCATool, as it is necessary to guarantee the representativeness of the population, especially for the analysis of smaller areas, such as regional health areas.

Despite the limitations raised, the study allowed for the assessment of PHC attributes in Belo Horizonte by means of a telephone survey, showing that it is an innovative form of assessment and that it can be replicated throughout the country. The PCATool adopted in a telephone survey proved to be an important instrument for verifying the presence of PHC attributes, allowing for the evaluation of health services from the user's perspective, in addition to being useful in the management of services. Because it is an instrument that is used worldwide, with different versions validated for local contexts, it allows for the findings to be compared.

Despite the use of the nationally validated assessment instrument, the study still recommends an adaptation to local realities, thus making it more sensitive to different situations.

There are still gaps to be explored, such as conducting evaluative studies in smaller areas, such as regional health, or even in the local BHU context, which would be of great value to local managers.

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