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# Performance of primary health care according to PCATool instrument: a systematic review

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**Abstract** *This study aims to analyze studies that evaluated the performance of Primary Health Care (PHC) services by using the Primary Care Assessment Tool (PCATool) under a worldwide user perspective. This is a systematic review that implemented the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model, from the following databases: Lilacs, Medline, SciELO, PubMed and the Coordination for the Improvement of Higher Education Personnel (CAPES) Journals Website, using descriptors Primary Care Assessment Tool and PCATool. Considering inclusion and exclusion criteria, we analyzed 22 research papers published from 2007 to 2015. The best-evaluated attributes were cultural competence, first contact use and longitudinality. On the other hand, the worst evaluated were first contact accessibility, family orientation, community orientation and comprehensiveness. Most of the health services evaluated were from Brazil, applied to "traditional" primary care clinic (UBS) and the Health Family Strategy (FHS). Services evaluated should strengthen structure and process components to achieve a better performance in PHC.*

**Key words** *Primary care assessment tool, Primary Health Care, PCATool, Systematic review, Health evaluation*

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## Introduction

In 1978, with the Alma-Ata International Conference[1], Primary Health Care (PHC) gains momentum as a strategy to be implemented in the operationalization of health services (HS) under ongoing health care that provides prevention, promotion, treatment and rehabilitation at affordable costs[1-4].

Based on the assumptions defined in Alma-Ata[1], Starfield[5] codified PHC into four essential attributes and three derivatives, which qualify services as PHC and increase their interaction power with users and communities. The essential attributes are first contact access, access and use of HS whenever necessary; longitudinality, understood as a professional-subject-of-care temporal relationship, leading to the establishment of a strong mutual trust; coordination, understood as the integration of all the care that the user receives and needs with the other HS; comprehensiveness, represented by actions of promotion, prevention, treatment and rehabilitation appropriate to the PHC context, recognizing the biopsychosocial character of the health-disease-illness process[6]. Derivative attributes include family orientation, which is the knowledge of family factors that interfere in the health-disease-illness process by the health team, considering the family as the subject of care; community orientation, understood as the recognition of community health needs, guiding services for their benefit and, finally, cultural competence, which means adapting the HS to the cultural specificities of the community served[5].

According to Fracolli et al.[3] and Ibanez et al.[7], due to the lack of research to evaluate the performance of PHC, the Primary Care Assessment Tool (PCATool)[8,9] was based on Donabedian[10] theory on the evaluation quality of HS structure, process and results.

The publicly-owned instrument implemented by the World Health Organization (WHO) consists of a structured questionnaire that empirically measures the essential PHC attributes and derivatives through the evaluation of users[8,9], managers and health professionals[11], which has been adapted and validated in different countries, namely, Brazil[11,12], South Korea[13] and Catalonia-Spain[14].

According to Donabedian[10], the quality component of the structure corresponds to the characteristics of the service; the process refers to actions by health professionals and populations; and results reflect the health status achieved. Regarding the PCATool[8,9] instrument, the attributes enable the evaluation of services' structure and process. Longitudinality and coordination attributes involve both structure and process characteristics, while the structure aspect of services is strongly linked to the first contact access/sub-item accessibility and comprehensiveness/sub-item available services, whereas the process category is more involved in first contact access/sub-item use and comprehensiveness/sub-item services provided[5].

To this end, this study aims to analyze the performance of PHC services worldwide, through studies available in the national and international literature in relation to the attributes originally proposed by Starfield[5] in the PCATool instrument.

## Methods

This is a systematic review built on the recommendations proposed in the Guide Preferred Reporting Items for Systematic Reviews and Meta-Analyzes - PRISMA[15], based on studies that used the PCATool instrument to evaluate SH's performance.

The PCATool appears as a questionnaire divided into sections by evaluated attribute, which are divided into essential attributes and their sub-items: first contact access, with sub-items accessibility and use; longitudinality; coordination, with sub-items integrated care and information system; and comprehensiveness, with sub-items available services and services provided.

The identification and selection of studies occurred from June to October 2015, independently by two trained researchers, through the guiding question: "Which studies evaluated the performance of PHC services worldwide using the PCATool instrument, from the user's perspective?"

The main health databases consulted were the Latin American and Caribbean Health Sciences Literature (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE), CAPES Journals Website, Scientific Electronic Library Online (SciELO), PubMed (US National Library of Medicine National Institutes of Health). The Pan American Health Organization (PAHO) and WHO databases were also included. Descriptors used in the search were "primary care assessment tool" and "PCATool" and in their Spanish and Portuguese versions.

Secondary data qualitative papers were excluded from the study whose evaluated users

were tuberculosis patients, since in order to cover this condition, the PCATool instrument underwent considerable adaptations, theses, manuals, editorials and studies that exclusively evaluated professionals and managers. The inclusion criteria were original studies that applied the PCATool to target users, which evidenced defined performance classification criteria, i.e. a cut-off point from which the evaluated service could be classified as adequate to PHC principles.

In total, 466 papers were identified, of which 311 were excluded due to duplication within and between the databases, leaving out 155 papers, which were analyzed. Then, applying the exclusion criteria, 83 studies were fully analyzed. In the end, applying the inclusion criteria, we analyzed 22 original papers that implemented the PCATool to users which included, at least, an essential or derivative attribute in the instrument and that defined a minimum value for the performance of the evaluated PHC services.

Regarding the services' performance assessment, studies evaluated used different methods, and 19 studies used the Likert-type scale with an adjusted score from zero to ten. Of these, one paper[16] considered satisfactory performance values above 7.0; 11 papers[17-29], values equal to or above 6.6; one paper[27], values above 4 and 6 papers[19,30-34], values above 3.0. Another 3 papers adjusted the Likert scale from 0 to 100, and 2 studies[35,36] evaluated the performance of services according to the percentile achieved by the attribute and one study[37] classified values of 50% or greater as satisfactory. In this study, as a form of standardization, attributes related to the performance of services were classified as adequate and inadequate, according to the papers evaluated.

## Results

Chart 1 lists 22 studies published between 2007 and 2015, of which 15 (68.20%) are Brazilian[16-18,20-30,37] , 3 (13.63%) are Canadian[31,32,34], 2 (9,09%) Korean[33,35], one (4,54%) is Spanish[19] and one (4,54%) Chinese[36]. Only one (4.54%) study was implemented in two stages, before the health reform in Quebec and then[34], all the others were applied in a single stage. Four (18.2%) studies were applied in different PHC services to compare them to each other[21,26,28,35].

Regarding the studied population, 8 (36.36%) studies addressed only the child user population[17-19,22,23,25,26,30], through the application of PCATool to caregivers, 6 (27.27%) papers covered the adult population[20,28,29,33,34,36], 5 (22,73%) evaluated services in the adult and child population[27,31,32,35,37], 2 (9,1%) targeted the elderly population[16,21] and 1 (4.54%) focused on adult women as the research subject[24].

Regarding the type of services evaluated, eight studies exclusively evaluated Family Health Strategy (FHS)[16,17,20,24,25,27,29,30], one exclusively addressed "traditional" primary care clinic (UBS)[37], two jointly evaluated FHS and UBS[18,22], two evaluated comparatively FHS versus UBS[21,26], two evaluated FHS in comparison with other PHC services (Health Center and Community Health Worker Program - PACS)[23,28]. In relation to Canadian studies, one evaluated only the services provided by the Family Medicine Group[34] and two evaluated several PHC services: Group practice, Solo practice, Stand-alone walk-in clinic and Community Health Centers (CHCs)[31,32]. With regard to Korean studies, one evaluated services from CHCs and private clinics offering general practice, general surgery, family medicine, gynecology and obstetrics services[33] and the other evaluated PHC services in private clinics, school hospitals, public health centers and clinical cooperatives[35]. One Chinese study evaluated only CHCs[36] and the Spanish study assessed the Catalan population ascribed to *Arees Integrals de Salut*[19]. Two studies jointly evaluated urban and rural population[31,32], and one study exclusively evaluated the rural population[25] (Table 1).

The most evaluated attributes were longitudinality (24), first contact access/sub-item accessibility (19), community orientation (18) and family orientation (15). The least evaluated were cultural competence (2) and comprehensiveness (7).

Regarding the performance of services, derivative attribute cultural competence achieved the highest percentage of adequate performance (100%); first contact access attribute showed a low adequate performance (33.33%), as well as its sub-item accessibility (15.78%), while sub-item use showed a high adequate performance (71.42%); essential attribute longitudinality showed an adequate performance (62.50%); attribute coordination showed a lower performance than its sub-item integrated care (35.71% and 54.54%, respectively); finally, attribute comprehensiveness showed a lower performance than its sub-item services provided (50%) and higher performance than its sub-item available services (25%).

**Chart 1.** Matrix analyzing studies included in the systematic review on the use of the PCATool instrument in the evaluation of the performance of Primary Health Care services worldwide.

| Author | Objective | Study population | Location |
|---|---|---|---|
| Araújo et al., 2014[16] | Identifying the extent of attributes of family and community orientation in child health care in PHC[a]. | 548 caregivers of children under 12 years of age of the 24 health facilities (23 UBS[b] and 2 FHS[c]). | Brazil |
| Araújo et al., 2014[18] | Assessing the quality of PHC from the perspective of the elderly. | Interview with 100 elderly enrolled in 10 FHS teams of the 20 municipal primary health care facilities. | Brazil |
| Berra et al., 2014[19] | Evaluating the health perceptions of the child user. | 2,196 caregivers of children under 15 years of age in all 36 health areas called "*Arees Integrals de Salut*" according to the National Health System in the region of Catalonia. | Espanha |
| Carneiro et al., 2014[20] | Evaluating the quality of PHC by verifying the coordination attribute. | 607 adult users of the 48 FHS facilities of the municipality. FHS professionals. | Brazil |
| Carvalho, et al., 2013[21] | Evaluating the PHC orientation level with regard to the quality of life of the elderly attended. | 509 elderly (> 60 years) coming from 21 municipal PHCs, 13 of the 33 FHSs and 8 of the 23 UBS | Brazil |
| Mesquito-Filho et al. 2014[22] | Evaluating the attributes of primary health care for children from zero to two years of age | 343 caregivers of children aged 0 to 2 years attended at the municipal PHC services | Brazil |
| Furtado et al., 2013[30] | Analyzing the existence and extent of PHC attributes and the level of user enrollment vis-à-vis the FHS. | 44 mothers of children under one year of age monitored at an FHS. | Brazil |
| Haggerty, et al., 2007[31] | Evaluating Quebec primary care services from patients' care experiences in PHC. | 3,441 patients and caregivers of 100 primary care services (Group practice, Solo practice, Stand-alone, walk-in clinic, Community Health Center) in urban and rural areas. | Canada |

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**Chart 1.** continuation

| Autor | Appropriate | Performance Inappropriate |
|---|---|---|
| Araújo et al., 2014[16] | _____ | Family Orientation<br>Community Orientation |
| Araújo et al., 2014[18] | First Contact sub-item Use<br>Coordination sub-item Information System | First Contact<br>First Contact sub-item Accessibility<br>Coordination<br>Coordination sub-item Integrated Care<br>Comprehensiveness<br>Comprehensiveness sub-item Services Provided<br>Comprehensiveness sub-item Available Services<br>Community Orientation<br>Family Orientation |
| Berra et al., 2014[19] | First Contact Longitudinality<br>Coordination<br>Comprehensiveness sub-item Available Services<br>Comprehensiveness sub-item Services Provided<br>Cultural Competence | _____ |
| Carneiro et al., 2014[20] | _____ | Coordination |
| Carvalho, et al., 2013[21] | First Contact sub-item Use (FHS) | First Contact sub-item Use (UBS)<br>First Contact sub-item Accessibility (UBS) (FHS)<br>Longitudinality (UBS) (FHS)<br>Coordination (UBS) (FHS)<br>Comprehensiveness (UBS) (FHS)<br>Family Orientation (UBS) (FHS) |
| Mesquito-Filho et al. 2014[22] | Longitudinality | First Contact sub-item Accessibility<br>Coordination<br>Comprehensiveness sub-item Available Services<br>Comprehensiveness sub-item Services Provided<br>Family Orientation<br>Community Orientation |
| Furtado et al., 2013[30] | First Contact sub-item Accessibility<br>First Contact sub-item Use<br>Longitudinality<br>Coordination sub-item Integrated Care<br>Coordination sub-item Information System<br>Comprehensiveness sub-item Available Services<br>Family Orientation<br>Community Orientation | Comprehensiveness sub-item Services Provided |
| Haggerty, et al., 2007[31] | First Contact sub-item Accessibility<br>Longitudinality<br>Coordination | _____ |

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**Chart 1.** continuation

| Author | Objective | Study population | Location |
|---|---|---|---|
| Haggerty et al., 2008[32] | Identifying the characteristics of clinical organization and professional practice in the prediction of accessibility, longitudinality and coordination of care. | 2,725 patients from 100 PHC services (10 Community Health Centers, 57 private clinics, 16 private physician offices, 10 Walk in Clinics) in rural and urban areas. | Canadá |
| Jeon, 2011[33] | Adapting and validating the short version of the US Consumer Primary Care Assessment Tool in primary care in the Republic of Korea. | 606 users over the age of 17 were interviewed from 245 rural and urban Community Health Centers as well as from private clinics providing general practice, general surgery, family medicine, gynecology and obstetrics services. | South Korea |
| Leão e Caldeira, 2011[17] | Verifying the association between PHC attributes and the professional qualification promoted by the Family and Community Medicine Residency and by the Family Health Multidisciplinary Residency. | Caregivers of children from 0 to less than 2 years of age of 350 families enrolled and monitored in 43 of the 44 FHSs located in urban area. The sample was divided into children from FHSs with professionals with family medicine and related areas residency (RF) and those without residency in the area (sRF). | Brazil |
| Leão et al., 2011[23] | Comparing PHC in child health care in the family health teams with that of other childcare services at the municipal level from the viewpoint of caregivers. | Caregivers of children from 0 to less than 2 years of age of 350 families enrolled and accompanied in 43 of the 44 FHSs located in urban areas. | Brazil |
| Lima et al., 2015[24] | Evaluating FHS quality from the perspective of female users and verifying the association between PHC attributes. | 215 female users aged 20 to 49 years from the FHS services of the municipality of Serra, ES. | Brasil |
| Marques et al., 2014[25] | Evaluating PHC attributes focusing on child health. | Caregivers of children from 0 to 5 years of age from the 76 families enrolled in the FHS of the quilombola rural community Buriti do Meio in the North of Minas Gerais. | Brazil |
| Oliveira e Veríssimo, 2015[26] | Comparing the existence and extent of PHC attributes to child health between the traditional municipal FHS and UBS facilities. | 482 caregivers of children over one year of age (247 children in UBS and 235 in FHS) from the 21 municipal health facilities. | Brazil |

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**Chart 1.** continuation

| Autor | Appropriate | Performance Inappropriate |
|---|---|---|
| Haggerty et al., 2008[32] | Longitudinality<br>Coordination sub-item<br>Integrated Care | First Contact sub-item Accessibility |
| Jeon, 2011[33] | First Contact sub-item Use<br>Comprehensiveness<br>Cultural Competence | First Contact sub-item Accessibility<br>Longitudinality<br>Coordination<br>Community Orientation |
| Leão e Caldeira, 2011[17] | Longitudinality (RF) (sRF)<br>Coordination (sRF)<br>Comprehensiveness sub-item Services Provided (RF) (sRF) | First Contact (RF) (sRF)<br>Coordination (RF)<br>Comprehensiveness sub-item Available Services (RF) (sRF)<br>Family Orientation (RF ) (sRF)<br>Community Orientation (RF) (sRF) |
| Leão et al., 2011[23] | Longitudinality (FHS) (OS)<br>Coordination (OS)<br>Comprehensiveness sub-item Services Provided (FHS) (OS) | First Contact (FHS) (OS)<br>Coordination (FHS)<br>Comprehensiveness sub-item Available Services (FHS) (OS)<br>Community Orientation (FHS) (OS) |
| Lima et al., 2015[24] | First Contact sub-item Use | First Contact sub-item Accessibility<br>Longitudinality<br>Coordination sub-item Integrated Care<br>Coordination sub-item Information System<br>Comprehensiveness sub-item Available Services<br>Comprehensiveness sub-item Services Provided<br>Family Orientation<br>Community Orientation |
| Marques et al., 2014[25] | First Contact<br>sub-item Use<br>Coordination sub-item Information System | First Contact sub-item Accessibility<br>Longitudinality<br>Coordination sub-item Integrated Care<br>Comprehensiveness sub-item Services Provided<br>Comprehensiveness sub-item Available Services<br>Family Orientation<br>Community Orientation |
| Oliveira e Veríssimo, 2015[26] | First Contact sub-item Use (FHS)<br>Coordination sub-item<br>Integrated Care (FHS) | First Contact sub-item Accessibility (FHS) (UBS)<br>First Contact sub-item Use (UBS)<br>Longitudinality (FHS) (UBS)<br>Coordination sub-item Integrated Care (UBS)<br>Coordination sub-item Information System (FHS) (UBS)<br>Comprehensiveness (FHS) (UBS)<br>Family Orientation (FHS) (UBS)<br>Community Orientation (FHS) (UBS) |

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**Chart 1.** continuation

| Author | Objective | Study population | Location |
|---|---|---|---|
| Pereira et al., 2011[37] | Evaluating organizational and performance characteristics from users. | 55 users (adults and companions of children under 14 years) from a UBS of the 14 PHC services facilities of a municipality in rural São Paulo. | Brazil |
| Reis et al., 2013[27] | Evaluate the access and use of the FHS as the gateway to the SUS, identifying the structural and procedural elements that strengthen or hamper the accomplishment of this role. | 882 users (adults and children caregivers) enrolled and monitored in 44 of the 89 FHS teams. | Brazil |
| Silva et al., 2014[28] | Evaluating the PHC Comprehensiveness process from the users' viewpoint. | 373 adult users, 124 (33.6%) covered by the FHS and 249 (66.4%) by other services – Health Center and Community Health Worker Program as the main source of PHC. | Brazil |
| Silva e Fracolli, 2014[29] | Evaluating attributes of first contact access, comprehensiveness, care coordination, longitudinality, family orientation and community orientation, FHS attributes from the perspective of users. | 527 adults over 18 years of age enrolled in 33 municipal FHS facilities. | Brazil |
| Sung, et al., 2010[35] | Comparing different PHC services from the perspective of patients. | 602 patients enrolled in different PHC care services (private clinics, school hospitals, public health centers and clinical cooperatives). | South Korea |
| Tourigny et al., 2010[34] | Assessing how primary care reform affects patients' experience with regard to the essential realms of PHC. | 1,046 adult users interviewed in 5 of the 13 Family Medicine Group at the onset of implementation and after 18 months of operation. | Canada |
| Wang et al., 2014[36] | Evaluate PHC attributes in CHC through user evaluation. | 3,360 adult PHC users serviced at the Community Health Center. | China |

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## Discussion

The PCATool instrument is recent in the evaluation of PHC services, which justifies the publication period of the studies found (2007 and 2015). Its first version was shown in 2000 to evaluate services provided to the child user[9], followed by the mirrors instruments for the evaluation of

**Chart 1.** continuation

| Autor | Appropriate | Performance Inappropriate |
|---|---|---|
| Pereira et al., 2011[37] | First Contact<br>Longitudinality<br>Comprehensiveness<br>Coordination | Family orientation<br>Community orientation |
| Reis et al., 2013[27] | _____ | First Contact<br>First Contact sub-item Use<br>First Contact sub-item Accessibility |
| Silva et al., 2014[28] | First Contact sub-item Use (FHS)<br>Longitudinality (FHS) | First Contact sub-item Use (OS)<br>First Contact sub-item Accessibility (FHS/ OS)<br>Longitudinality (OS) |
| Silva e Fracolli, 2014[29] | First Contact sub-item Use<br>Longitudinality | First Contact sub-item Accessibility<br>Coordination sub-item Integrated Care<br>Coordination sub-item Information System<br>Comprehensiveness sub-item Available Services<br>Comprehensiveness sub-item Services Provided<br>Community Orientation |
| Sung, et al., 2010[35] | First Contact<br>Longitudinality | Coordination<br>Community/Family Orientation |
| Tourigny et al., 2010[34] | Coordination sub-item Integrated Care (AR / DR)<br>Longitudinality (AR/ DR) | First Contact sub-item Accessibility (AR / DR) |
| Wang et al., 2014[36] | First Contact sub-item Accessibility<br>First Contact sub-item Use<br>Coordination Service Integration System<br>Longitudinality<br>Coordination sub-item Information System<br>Comprehensiveness sub-item Available Services<br>Comprehensiveness sub-item Services Provided<br>Family Orientation<br>Community Orientation | _____ |

a- Primary Health Care. b- Primary Health Care Facility. c- Family Health Strategy.

services by adult users[8], by professionals and by health service providers[11]. In Brazil, the original version of the instrument was adapted and validated for existing PHC services in the country by Almeida and Macinko[12], conducted in the city of Petrópolis, and by Harzheim et al., applied to PHC services in Porto Alegre, Rio Grande do Sul.

This study evidenced that most of the studies listed were performed in Brazil. This is due to the following reasons: a) in 2010, the Ministry

**Table 1.** Performance of attributes according to studies that used the PCATool instrument.

| | Total number of evaluations | Good performance | |
|---|---|---|---|
| | N | N | % |
| Essential attributes | | | |
| First Contact | 9 | 3 | 33,33 |
| FC Accessibility | 19 | 3 | 15,78 |
| FC Use | 14 | 10 | 71,42 |
| Longitudinality | 25 | 16 | 64 |
| Coordination | 14 | 5 | 35,71 |
| Coord. Integrated Care | 11 | 6 | 54,54 |
| Coord. Information System | 8 | 3 | 37,5 |
| Comprehensiveness | 7 | 2 | 28,57 |
| Comp. Available Services | 12 | 3 | 25 |
| Comp. Services Provided | 12 | 6 | 50 |
| Derivative attributes | | | |
| Family Orientation | 15 | 2 | 13,33 |
| Community Orientation | 18 | 2 | 11,11 |
| Cultural competence | 2 | 2 | 100 |

of Health launched/introduced the PHC Evaluation Instrument Manual (PCATool-BR)[11], an adaptation of the original instrument made by Harzheim et al.[39] for the evaluation of PHC services from the perspective of adult and child users, health professionals and managers; b) in the manual, the Ministry of Health recommends that the instrument be used for the evaluation and monitoring of PHC quality as a routine of the Family Health teams, at various levels of management and for academic use; c) Brazil, as well as Canada, which presented the second largest representation in the sample, have PHC-oriented health systems. Thus, an instrument for evaluating the performance of health services is very useful in feeding and feeding back policies geared to the sector[3].

In relation to the evaluation of attributes, cultural competence had the best performance, however, it appeared only twice in the papers analyzed, which does not allow us to infer that this attribute is strongly incorporated in PHC services. One of the factors that may explain the low frequency found may be the non-inclusion of this attribute in the PCATool-BR[11] instrument, although it is included in the original version for the assessment of adults[8] and its evaluation encouraged in later publications[5].

The first contact access attribute and its subitem accessibility had poor performance, both making up part of the evaluation of HS structure according to the Donabedian model[5,10]. The low performance found may reflect geographical and organizational barriers to PHC services, such as reduced facility working hours, difficulties faced in scheduling appointments, and waiting time at the facility in order to be serviced. This low percentage impairs individual comprehensive health care, since, when faced with access barriers, health care tends to be postponed, hampering the impact of possible prevention actions, incurring future additional expenses[5]. However, first contact access attribute's sub-item use, corresponding to Donabedian[10] process category, had a high performance, suggesting that the user seeks health services whenever necessary[11], before visiting a service of greater specialization[2,5]. Thus, its high performance may indicate that, while there are structural hurdles in accessing the evaluated services, users recognize PHC services as their primary source of health care.

The longitudinality attribute, belonging to process category[10], had the third best evaluation in this review. Longitudinality is not an exclusive PHC attribute, but is essential to it. It develops insofar as users identify the location or provider of PHC services as their usual source of health care[5]. In this respect, the definition of an ascribed population, a PHC[4] characteristic, and the universal access to healthcare in Brazil through ex-

panded FHS[24] can be variables that explain the good performance found.

The essential attribute coordination and its sub-items integrated care and information system had low adequate performance. To achieve a satisfactory coordination, PHC and subspecialty care must be closely linked through appropriate communication and a strengthened referral and counter-referral system. The low performance of the attribute may show flaws in this interrelationship, which evidences the need for greater integrated and articulated PHC in the HS[4].

In the same perspective, the essential attribute comprehensiveness and its sub-item available services had inadequate performance, below sub-item services provided. The low performance found can show the critical difficulty of assessed HS in PHC in offering a complete range of individual health-related needs and in making available the resources needed to include them[5]. Comprehensiveness requires different levels of complexity in health promotion, prevention, recovery and rehabilitation services[6,22] from health counseling to small surgeries[8]. The good performance of comprehensiveness demands constant investments in physical, material and human resources, which requires assigning to PHC its real significance and not to be characterized as a service of low complexity and requiring low investment[4]. However, comprehensiveness sub-item services provided had a better performance, evidencing a greater capacity of the facility to provide services well rather than to supply a greater variety of these services.

With the exception of cultural competence, the attributes community orientation and family orientation evidenced the worst performance rates of the entire study. According to Starfield[5], a high level of achievement of the exclusive and fundamental qualities of PHC results in these three derivative attributes. The low performance achieved by family orientation and community orientation may be associated with a difficulty in PHC services evaluated to provide comprehensive care geared to family and community, being still far from the of Social Production of Health model[6].

However, some limitations should be pointed out: the difficulty of finding studies that presented a defined and standardized classification of adequate performance of PHC services; studies that evaluated, in a limited way, only some attributes; the non-homogeneity of PHC services; the limitations of the PCATool itself, considering that all the attributes showed the same weight in the orientation of PHC services, as well as, the conception that the quality of PHC services are included in the attributes of the instrument.

## Conclusion

This review shows an overview of the performance of PHC services worldwide based on studies that have used PCATool as an assessment tool. We found that some attributes of assessed PHC services – cultural competence, service use and longitudinality – were well evaluated. However, other attributes – first contact access, first contact access/accessibility, comprehensiveness, family orientation and community orientation – evidenced weaknesses. It was observed that most of the evaluated services are Brazilian and represented by UBS and FHS, whose performance still requires improvement. Therefore, considering the PHC model addressed in the PCATool, the need to strengthen the process and structure components for better PHC performance is highlighted.

## Collaborators

M Louzada-Prates: Conception, draft elaboration, search in databases, identification of manuscripts, data analysis, writing and other stages of production of the manuscript. JC Machado: Research planning and critical review of the manuscript. LS da Silva: critical review of the manuscript. PS Avelar: Search in databases and identification of manuscripts. LL Prates: Identification of manuscripts, critical review of the manuscript and translation of abstract. ET Mendonça: Research planning and critical review of the manuscript. GD Costa: Research planning. RMM Cotta: Research planning and critical review of the manuscript.

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