PCATool: looking for an instrument to assess the quality of primary health care services in Brazil

Objective: This is an integrative literature review study that analyzed articles that applied the PCATool as a method for evaluating the quality of Primary Health Care (PHC) services. The main objective was to analyze the limitations inherent in the use of this tool. Method: The Virtual Health Library, SciElo and PubMed databases were used. The search descriptors were selected using the Health Sciences Descriptors (DeCS): Primary Health Care AND PCATool. Results: The cross-referencing was done by advanced search, using the boolean AND. Following the inclusion and exclusion criteria, 11 articles published between 2018 and 2022 were analyzed. Conclusion: The critical analysis of the studies revealed several limitations of the PCATool in the Brazilian context. These limitations are grouped into several analytical categories, including the limited scope of the forms of care, the restriction of the reduced version of the instrument, the equal distribution of weights to the attributes, the emphasis on the users' perspective, the lack of technical evaluation and results, as well as the absence of specific items for different population groups. These limitations highlight the importance of carefully considering the local context and needs when applying the PCATool, in order to obtain a more comprehensive and accurate assessment of the quality of PHC, highlighting the challenges necessary to find an appropriate instrument for the Brazilian reality.

ABSTRACT

Objective: This is an integrative literature review study that analyzed articles that applied the PCATool as a method for evaluating the quality of Primary Health Care (PHC) services. The main objective was to analyze the limitations inherent in the use of this tool. Method: The Virtual Health Library, SciElo and PubMed databases were used. The search descriptors were selected using the Health Sciences Descriptors (DeCS): Primary Health Care AND PCATool. Results: The cross-referencing was done by advanced search, using the boolean AND. Following the inclusion and exclusion criteria, 11 articles published between 2018 and 2022 were analyzed. Conclusion: The critical analysis of the studies revealed several limitations of the PCATool in the Brazilian context. These limitations are grouped into several analytical categories, including the limited scope of the forms of care, the restriction of the reduced version of the instrument, the equal distribution of weights to the attributes, the emphasis on the users' perspective, the lack of technical evaluation and results, as well as the absence of specific items for different population groups. These limitations highlight the importance of carefully considering the local context and needs when applying the PCATool, in order to obtain a more comprehensive and accurate assessment of the quality of PHC, highlighting the challenges necessary to find an appropriate instrument for the Brazilian reality.

DESCRIPTORS: Evaluation of Public Health Actions, Primary Health Care, Public Health Administration.
INTRODUCTION

Primary Health Care (PHC) is the fundamental level of the health system, according to the Declaration of Alma-Ata (1978) 1. It constitutes the first and main point of access, offering comprehensive care directed at the community, with the aim of providing comprehensive and continuous care over time, closely aligned with the daily context of people and their families in their territories 1. Evidence corroborates that the solidity and effectiveness of health systems see PHC as essential for guaranteeing health as a universal right. 2

In 1988, when the Unified Health System (SUS) was established as a health policy promoting universal and equitable access, various strategies and actions were adopted to implement, consolidate and expand PHC in Brazil 3, from the creation of the Family Health Program (PSF) in 1994, the change to the Family Health Strategy (ESF) in 2006, to the publication of the new National Primary Care Policy (PNAB) in 20173. Despite these 29 years of history and evolution in Brazil, various challenges are still being faced to make PHC effective and strong 4.

Policies aimed at strengthening PHC play a key role in implementing the fundamental principles of the SUS, notably universality, equity and comprehensiveness. 4 PHC coverage in the national territory from January to August 2023 was 78.22% in Brazilian municipalities. 6 PHC services, both in their structure and in their results, vary considerably according to the population size and socioeconomic level of the localities, as explained by Barros et al 7.

It should also be noted that in recent years PHC has expanded in Brazil through the Family Health Strategy (ESF). This type of care has unique characteristics in the production of care with health actions centered on the person/family, bonds with the user, comprehensiveness, coordination of care, articulation with the care network, social participation and intersectoral action. 8

Despite the expansion of PHC, it is necessary to guarantee the quality of services. Evidence shows that effective, quality PHC is related to user satisfaction with the system. To this end, it is essential to develop
tools to assess the quality of care provided, with the aim of providing information for planning and decision-making, both by managers and civil society, in order to better meet the health needs of the population.

In recent years, the operational definition of PHC, systematized by Starfield, has been widely applied by the Ministry of Health (MoH), especially since the first edition of the PNAB in 2006. This policy outlined primary care as a set of health actions in the individual and collective domains, encompassing health promotion, health protection, disease prevention, diagnosis, treatment, rehabilitation and health maintenance. Based on this definition, it is possible to conceive of the four essential attributes of PHC: accessibility; longitudinality; comprehensiveness and coordination. In addition, three derived attributes, including family-centered care, community orientation and cultural competence, qualify the actions of PHC services.

Sá 11 highlights the growing need for methods to evaluate the effectiveness of PHC as a health policy, driving the development of various evaluation models since the 1990s in order to improve health care. Among these initiatives is the National Program for Improving Primary Care Access and Quality (PMAQ-AB), as well as the indicator called Hospitalizations for Causes Sensitive to Primary Care (ICSAP).

The PMAQ-AB was implemented in 2011 by the Ministry of Health as the main instrument for assessing the quality of PHC services. However, research has already indicated difficulties, from the application, due to the complex and lengthy methodology, to the lack of consensus on definitions, with many variables for evaluating teams, as well as samples with no external validity and low international comparability.

As a response to these challenges, and also with the reformulation of federal funding for PHC, in order to expand access with equity, increase the resolutiveness of PHC and improve the quality of care provided, the Ministry of Health opted to replace the PMAQ-AB in 2019 with the Primary Care Assessment Tool (PCATool). This is an internationally recognized tool for evaluating PHC services, which covers the dimensions and attributes defined by Barbara Starfield. The relevance of the PCATool derives from its psychometric origin, national and international acceptance.

The PCATool is based on Donabedian's theory of evaluating the quality of the structure, process and results of health services. This instrument was originally developed by Starfield and Leiyu Shi at the Johns Hopkins Primary Care Policy Center. This tool, which is in the public domain and has been adopted by the World Health Organization (WHO), is a self-administered, structured questionnaire that empirically measures the essential and derived attributes of PHC 18. It originally had versions aimed at children, adults over 18, health professionals and health service managers.

The PCATool is an instrument that has been translated and adapted in several countries with different health systems, including Spain, Canada, South Korea, China (Hong Kong), Argentina, Puerto Rico and Uruguay, among others. It has been statistically validated and has been used in whole or in part by several countries. Adaptations were made to adapt the instrument to the Brazilian reality, with translation, adaptation, content and construct validation, as well as reliability analysis. The PCATool - Brazil has the function of assessing the quality of services in PHC, considering both structural aspects and work processes, providing a valuable tool for understanding and improving the effectiveness of health services in the context of PHC.

The Family Health Department (DESF) of the Primary Health Care Secretariat (SAPS) has launched an updated version of the Primary Care Assessment Tool Manual (PCATool-Brazil), which has been validated for Brazil in various PCATool versions, depending on the target audience (children, adults, health professionals - doctors, nurses, dentists, managers). It stands out that the PCATool was incorporated into the questionnaire in the National Health Survey (PNS) in 2019, before the publication of the PCATool-Brazil manual, which innovated by including 25 items from the version summarized for adult users by the Brazilian Institute of Geography and Statistics (IBGE), by means of a nationwide and representative survey. The Ministry of Health began to incorporate the possibility of using this methodology with Ordinance number 3,222 of December 10, 2019.

The PCATool-Brazil scores were used in 2022 as an integral part of the performance indicators for the Family Health and Primary Care teams funded by the Ministry of Health within the scope of Previne Brasil. Updating the instrument made it possible to contribute to the SUS by including a fundamental axis, which is the evaluation of Family Health teams and Primary Care teams.

This study brings up the discussion of this issue, in order to reflect on the possible limitations in the use of the PCATool as a tool for evaluating work processes and the organization of PHC services, considering the complexity of an evaluation process of health services, especially in Brazil, a country with a large territorial extension and countless structural, social, economic and cultural specificities and diversities. The focus of this research is on evaluating this tool for user-adult versions. It should also be noted that there is a lack of consensus in the literature on an instrument that can take into account the various regional differences and the high heterogeneity of PHC services.

**OBJETIVO**

Given the importance of PHC, which is considered to be the organizer and coordinator of health care, and the need to evaluate its performance, this article aims to carry out an integrative literature review on the limitations of the PCATool-Brazil in the adult user version as an instrument for evaluating PHC in Brazil.

**MÉTODO**

This is a literature review, using integrative analysis, on the PCATool as a tool for evaluating PHC in Brazil. In order to carry out this study, we went through the six stages that make up the preparation of...
an integrative review: 1. establishing the theme and research question; 2. searching the literature and establishing inclusion and exclusion criteria; 3. selecting the studies; 4. categorizing the included studies; 5. interpreting the results; and 6. synthesizing the knowledge.

The PICO strategy was used to develop the guiding question for this study, as it promotes an accurate search for scientific evidence related to the subject. PICO is an acronym in which the letter P (population) indicates the population, the letter I (intervention) is related to the intervention, C (comparison) refers to the comparison and the letter O (outcome) refers to the expected outcomes. In this sense, for this study the acronym determined was: P - adults, I - PHC evaluation, C - not applicable, O - PCA Tool. Thus, the following guiding question was established: What are the possible limitations in using the PCA Tool-Brazil instrument in the reduced adult user version in Brazil?

The Virtual Health Library (VHL), PubMed and the Scientific Electronic Library Online (SciELO) were the databases used to survey the manuscripts. The search descriptors were selected using the Health Sciences Descriptors (DeCS): Primary Health Care AND PCA Tool. The cross-referencing was done by advanced search, using the Boolean AND. The filters used were: articles in Portuguese, English and Spanish published from January 2018 to December 2022. To complement the results found, a manual search was carried out.

Incomplete articles, duplicates, secondary data articles, qualitative articles, theses, manuals, editorials and articles that did not meet the objectives of the study were excluded. The inclusion criteria were: original studies which applied the PCA Tool to adult patients and which presented limitations in relation to the use and application of the instrument.

The search was carried out from March to May 2023 and 138 articles were found, 87 of which were published in the VHL, 19 in PubMed, 18 in SciELO, and 14 in the manual search. Subsequently, 60 duplicate publications were removed, and another 68 were excluded after refinement based on the inclusion and exclusion criteria. After careful analysis, 11 publications remained for full evaluation, being articles that addressed the use of the PCA Tool in adult patients in the reduced and extended versions and that presented limitations in relation to the use of the PCA Tool.

The articles were screened by analyzing the title and abstract, followed by full reading by three independent researchers. Relevant data was extracted from the included articles and a thorough analysis was carried out. Finally, the results were synthesized, grouping the articles according to the requirements of the study, with the aim of answering the key question. The flowchart shown in Figure 1 presents the structuring of the corpus of this review, following the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA).

It should be noted that this type of study does not need to be approved by the Research Ethics Committee. Only public domain manuscripts were used and all ethical criteria regarding the preservation of authorship and citation of sources were respected.

**RESULTS**

Table 1 shows the eleven articles which, after thorough analysis, were included for the development of this work, from which the following information is extracted: authors, year of publication, type of study, objective and limitation on the use of PCA Tool.
Table 1. Synopsis of the data collected from the articles in the integrative review from 2018 to 2022, organized by authors, year of publication, type of study, objective and limitation on the use of the PCATool.

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>YEAR</th>
<th>TYPE OF STUDY</th>
<th>OBJECTIVE OF THE STUDY</th>
<th>LIMITATION OF INTEREST</th>
</tr>
</thead>
<tbody>
<tr>
<td>CARVALHO et al.</td>
<td>2022</td>
<td>Transversal</td>
<td>To describe the positive evaluation of PHC in Brazil from the perspective of users and its association with sociodemographic characteristics and comorbidities.</td>
<td>The PCATool only covers those who have used a health service and had a medical consultation. The reduced version only allows the general score to be calculated. It is not possible to obtain specific scores for each of the essential and derived attributes.</td>
</tr>
<tr>
<td>COSTA et al.</td>
<td>2020</td>
<td>Transversal</td>
<td>To evaluate the essential and derived attributes of PHC from the perspective of users and professionals of 35 ESFs in São José de Ribamar, Maranhão, Brazil. José de Ribamar, Maranhão, Brazil.</td>
<td>All the attributes provided for in the PCATool have the same weight, assuming that the performance of services can be assessed exclusively by the presence and extent of these PHC attributes.</td>
</tr>
<tr>
<td>GOMES; FRACOLLI</td>
<td>2019</td>
<td>Transversal</td>
<td>To evaluate the ESF from the perspective of adult users in the region of Presidente Prudente, in the interior of the state of São Paulo, with reference to the essential and derived attributes of PHC.</td>
<td>The PCATool has limitations such as considering that the attributes have the same weight in the measure of orientation towards PHC and using only the experience of the actors involved in care as an evaluation criterion, not incorporating the technical evaluation of the service provided.</td>
</tr>
<tr>
<td>MARTINS et al.</td>
<td>2022</td>
<td>Transversal</td>
<td>To evaluate the quality of PHC attributes according to the characterization and perspective of women of reproductive age.</td>
<td>The PCATool has some specific items for the female population, but most of them are related to the assessment of the general population.</td>
</tr>
<tr>
<td>PERILLO et al.</td>
<td>2020</td>
<td>Transversal</td>
<td>To evaluate the attributes of PHC from the point of view of users interviewed in a telephone survey in Belo Horizonte.</td>
<td>The reduced version of the PCATool for users was not developed to analyze scores by attribute, but is capable of measuring the presence and extent of the essential and derived attributes of PHC through the overall score.</td>
</tr>
<tr>
<td>Study</td>
<td>Year</td>
<td>Type</td>
<td>Abstract</td>
<td>Discussion</td>
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<tr>
<td>PERILLO et al. 27</td>
<td>2021</td>
<td>Transversal</td>
<td>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 CNCDs.</td>
<td>The reduced version of the adult PCATool has limitations, the first of which is that it only uses the actors involved (users) in care as an evaluation criterion, not incorporating, for example, the technical evaluation of the service provided. The PCATool was not developed to analyze scores by attribute, but is capable of measuring the presence and extent of essential and derived PHC attributes through the overall score.</td>
</tr>
<tr>
<td>PINTO et al. 28</td>
<td>2021</td>
<td>Transversal</td>
<td>To compare the results obtained by the IBGE in the evaluation of adult users of PHC services between the regions of the country in the SUS.</td>
<td>The PCATool measures attributes in the structure and process dimensions, but does not measure the results item of the classic health evaluation triad (structure-process-results evaluation).</td>
</tr>
<tr>
<td>SILVA et al. 29</td>
<td>2018</td>
<td>Transversal</td>
<td>Evaluating PHC from the perspective of male ESF users.</td>
<td>The PCATool has no specific items for the male population.</td>
</tr>
<tr>
<td>SILVA CT 30</td>
<td>2022</td>
<td>Transversal</td>
<td>To analyze the use and evaluate the attributes of PHC in Brazil from the point of view of users.</td>
<td>The PCATool has limitations, such as considering the same weight for all items when calculating the scores per attribute. As for the use of the reduced version of the PCATool, the limitation is attributed to the fact that it was not constructed with the intention of measuring scores by attribute, but was able to measure presence and extent from the overall score.</td>
</tr>
<tr>
<td>VIDAL et al. 31</td>
<td>2018</td>
<td>Transversal</td>
<td>To evaluate the performance of PHC in Florianópolis, SC, Brazil.</td>
<td>The PCATool gives equal weight to all attributes, assuming that the performance of services can be assessed exclusively by the presence and extent of these PHC attributes.</td>
</tr>
<tr>
<td>RIBEIRO, L A; SCATENA, JHG. 32</td>
<td>2019</td>
<td>Transversal</td>
<td>Evaluating Family Health Units against the essential and derived attributes of PHC.</td>
<td>The PCATool is an internationally used tool that may not meet all the organizational specificities of PHC. Although it is one of the most sensitive and reliable tools for assessing the quality of PHC services, it does not take into account the multi-professional configuration of health teams along the lines of the ESF, basically addressing aspects related to the practice of doctors and nurses.</td>
</tr>
</tbody>
</table>

PHC: Primary Health Care; PCATool: Primary Care Assessment Tool; FHS: Family Health Strategy; CNCD: Chronic Non-Communicable Disease; IBGE: Brazilian Institute of Geography and Statistics; SUS: Unified Health System.

Source: Prepared by the authors.
DISCUSSION

The PCATool has been widely used in studies aimed at assessing the quality of PHC services, with results that demonstrate good consistency and reliability. However, it is essential to recognize some limitations that emerge when using this tool in the reduced adult user version in the Brazilian context.

Among the limitations observed in the studies, it can be seen that the questions on the PCATool-Brazil adult short version questionnaire ask about the search for a health service centered on a health service/doctor/nurse. It should be noted that this approach is the opposite of PHC, which is characterized by multi-professional care. The predominance of evaluating the quality of services based on the experience of using health services, especially medical care, can exclude other essential forms of primary care. This restriction can influence the representativeness of the evaluation, leading to a distorted understanding of the quality of primary care. Another aspect pointed out by the authors concerns the lack of interviews with individuals who have not had access to health services, which may result in incomplete information that would be relevant to identifying difficulties in accessing health.

Carvalho et al., Perillo et al. and Perillo et al. identified that although the use of the reduced version of the PCATool makes it possible to calculate a general score, it does not make it possible to obtain specific scores for each of the essential and derived attributes of PHC. This limitation can hinder a detailed analysis of the quality of services in different dimensions, making it impossible to fully understand the strengths and weaknesses. Pinto et al. corroborate this assertion, reporting the tool’s limitation when it comes to using the reduced version of the PCA Tool, as it only allows the overall score of the instrument to be calculated and does not allow specific scores to be obtained for each of the essential and derived attributes. This may limit the instrument’s ability to provide a complete picture of the impact of PHC on the health of the population.

In this perspective, Costa et al., Gomes and Fracolli and Vidal et al. also identify in the PCATool the attribution of the same weight to all attributes, assuming that the performance of services can be assessed exclusively by the presence and extent of these attributes. This may not adequately capture the relative importance of each attribute in the provision of health services. The one-dimensional approach may result in a less accurate and comprehensive assessment of PHC quality.

Pinto, points out in his study that the PCATool-Brazil points out limitations with regard to geographical and technological accessibility, as barriers that make it difficult to update the instrument, apply and organize the information, considering the territorial diversities of Brazil, including the monitoring of actions developed in PHC.

The study by Costa et al. highlights the need to add some qualitative questions to the instrument, considering it important in order to broaden the evaluation potential. However, this proposal could increase the time it takes to apply the instrument and make it difficult to analyze the answers more objectively.

Martins et al. report on the limitations of the PCATool and point out that the evaluation by the adult user is more directed at the general population, excluding important population segments that bring relevant specificities to evaluate PHC. The authors emphasize that although the adult version of the PCATool-Brazil evaluation tool is considered to be an expressive tool, considering the analysis of essential and derived attributes, and the quality of services offered in PHC, they stress the importance of adding items that can express issues aimed at women of reproductive age. This is corroborated by the study by Silva et al., which highlighted the need for specific items for the male population.

From this perspective, it should also be noted that the issue raised by the aforementioned authors brings to mind other population segments that should be considered and included in the evaluation tool.

The studies by Perillo et al. used a reduced version of the adult PCATool-Brazil in a telephone survey in Belo Horizonte, and their findings revealed the need to adapt the instrument to the local characteristics of PHC services. Another aspect that the authors point out was the inclusion in the PHC assessment of the use of telemedicine, which could strengthen the care coordination attribute. The authors also point out that new items could be included in response to changes in epidemiological demands, such as the increase in chronic diseases and non-communicable diseases.

Another important dimension is the emphasis given to user experience as an evaluation criterion in the PCATool, not incorporating, for example, the technical evaluation of the service provided.

The absence of a technical evaluation of the service can limit the understanding of the quality of primary care, since objective aspects and health outcome indicators are not included. This can lead to a subjective perception of the quality of primary care, without considering objective aspects and health outcome indicators.

Pinto et al. point out in their study that the PCATool does not measure the results item of the classic health evaluation triad, i.e. it does not evaluate the results achieved by PHC services directly; however, they state that the results are obtained in a comparative way, when the association with the outcome indicators — the effectiveness — of care on the health of the population is verified. These authors recommend changing one of the eligibility questions about the time of the last medical
consultation from 6 to 12 months.

The studies selected and analyzed provided various adaptations and recommendations to be included in the PCATool-Brazil, some of which are feasible and others which are more complex and require greater scientific robustness to be considered.

**FINAL CONSIDERATIONS**

Since 2010, the Ministry of Health has recommended using the PCATool questionnaire to evaluate primary health care services. In 2020, a new version of this instrument was launched, including other versions of questionnaires validated in Brazil, and with this, it was reaffirmed as the official instrument for evaluating PHC services in the country.

The PCATool has established itself as a relevant tool for assessing the quality of PHC services. However, it is important to recognize the limitations pointed out by various authors in this study. Thus, considering these limitations is fundamental for a careful interpretation of the results and for the continuous improvement of the instrument, aiming for a more complete, sensitive and comprehensive assessment of the quality of PHC in the country.

These results show that there are still many challenges to be faced in PHC and that there is a need to investigate new assessment instruments, which are still scarce in the literature, that can fill gaps identified in various studies and make important adaptations to the PCATool-Brazil instrument.

Also noteworthy is the need to include items aimed at certain segments of the population, such as the LGBTQIA+ community. This may fail to take into account the particularities and specific needs of different groups, limiting its application in assessments that seek to cover the various dimensions of society.

In this sense, the use of the PCATool-Brazil reduced adult version, as an instrument for assessing and monitoring the quality of PHC on a routine basis in the territories of primary care units, could bring to light reflections on the specificities needed, according to the demands of the region, as well as facilitating the updating of the instrument, application and organization of information. From this perspective, the partnership between universities and PHC services, through academic research, could articulate strategies to strengthen the PHC evaluation process.

**REFERENCES**


