

ENHANCEMENT OF PRIMARY CARE ASSESSMENT TOOL (PCAT): A SCOPING REVIEW

Pengembangan Alat Penilaian Layanan Kesehatan Dasar: A Scoping Review

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Abstract

Background: Strengthening the quality of primary health care is one way to improve public health. For this reason, an appropriate primary care assessment tool (PCAT) is necessary to evaluate and improve primary health care.

Objective: This study aims to provide an overview of the development of primary care assessment tools.

Methods: The study was conducted through a scoping review of articles written in English that were published in the PubMed, Scopus, Science Direct, and Semantic Scholar databases from 2010 to 2023.

Results: A total of 10 selected articles describe the development of primary care assessment tools, namely PCAT Malawi, Vietnam PCAT-PE, Vietnam PCAT-AE, CR-PCAT (China), PCAT-TI (Tibet), UG-PCAT (Uganda), PCAT-C (China), PCAT-Facility (Spain), KS-PCAT (Standard Korean), PCAT-10 (Spain), and Colombia PCAT. Each tool has a different development focus according to the context of each country.

Conclusion: This study provides an overview of the development of PCAT. In general, the development of PCAT in each country demonstrates different characteristics. The selection of a health service assessment tool must align with the needs of the element or aspect to develop.

Keywords: primary care assessment tool, PCAT-development, primary health care assessment, PCAT-modification.

Abstrak

Latar Belakang: Mengembangkan kualitas pelayanan kesehatan primer merupakan salah satu cara untuk meningkatkan derajat kesehatan masyarakat. Untuk itu diperlukan alat penilaian layanan kesehatan (PCAT) yang tepat untuk mengevaluasi dan meningkatkan layanan kesehatan primer

Tujuan: Tujuan penelitian ini adalah memberikan gambaran umum pengembangan alat penilaian layanan kesehatan.

Metode: Merupakan scoping review yang menyajikan artikel terbitan tahun 2010 hingga tahun 2023 di database Pubmed, scopus, science direct dan semantic scholar yang menggunakan bahasa inggris.

Hasil: Sebanyak 10 artikel yang teridentifikasi menggambarkan pengembangan alat penilaian layanan kesehatan yaitu PCAT Malawi, Vietnam PCAT-PE, Vietnam PCAT-AE, CR-PCAT (China), PCAT-TI (Tibet), UG-PCAT (Uganda), PCAT-C (China), PCAT-Facility (Spanyol), KS-PCAT (Korean Standar), PCAT-10 (Spanyol), dan Colombia PCAT. Setiap alat memiliki focus pengembangan yang berbeda, sesuai dengan konteks masing masing negara.

Kesimpulan: Secara umum, pengembangan PCAT dari setiap negara memiliki karakteristik yang berbeda. Pemilihan alat penilai layanan primer harus menyesuaikan dengan kebutuhan elemen atau aspek yang ingin dikembangkan.

Kata kunci: alat penilaian layanan kesehatan, layanan kesehatan primer, modifikasi PCAT, pengembangan PCAT.



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Introduction

Primary health care (PHC) plays a significant role in achieving Sustainable Development Goals (SDGs) with the aims of universal health coverage (UHC). UHC ensures that all individuals have access to necessary health services, regardless of time and location, including comprehensive and quality PHC to support health needs ranging from health promotion to prevention, treatment and rehabilitation, and palliative care (Renganathan and Davies, 2023).

The World Health Organization (WHO) advocates the adoption of PHC approach as the foundation for UHC. Attaining UHC stands as a key strategic objective for WHO, with the aim to extend coverage to an additional 1 billion people by 2025. To realise this commitment, each nation must possess a robust healthcare system that is efficient and equitable for the communities it serves. PHC is the most effective, inclusive, fair, and cost-effective way or solution to achieve this (Shimizu, 2022).

All individuals have the same right to achieve the best possible level of health; this is the standard policy that underlies PHC (Agbor, 2018). Therefore, measuring the quality of health services is necessary. To assess or measure the quality of PHC in a country, various health service quality measurement standards may be used (John Hopkins, 2022). Elements or aspects for assessing the quality of primary health services include accessibility, continuity, comprehensiveness, coordination, integrated care, and several additional aspects related to consumers, patients, and health service providers (Jeon, 2011).

The primary care assessment tool (PCAT) stands as one of the most commonly used health service quality assessment tools in several countries. The PCAT assessment includes a consumer-client survey, a facility survey, a provider survey, and a health system survey. The PCAT tool is developed in accordance with the principles of primary healthcare. Grasping this concept is helpful in elucidating the significance of the key questions incorporated in the

questionnaire. PCAT is deemed suitable for assessing the attainment of primary health services attributes as it furnishes details on structural and procedural components associated with the four primary care focal areas. The elements referred to in this case include accessibility, service coverage, patient population, and service sustainability (Hopkins, 2022).

PCAT has been implemented in several countries, namely Canada, Brazil, Spain, South Korea, and China. These countries develop versions of PCAT according to the conditions and needs of their respective countries, taking into account cultural differences, health systems, and community needs. In Indonesia, PCAT is used to assess doctors' performance (Hendrawan, 2013b; Pinto and Silva, 2021). The development of a local version of PCAT was carried out to ensure that health services align with community needs and that the tool is effective in evaluating the standard of PHC.

The enhancement of PCAT may serve as reference and illustration prior to adoption in a country. The successes and obstacles, as well as the advantages and disadvantages of this development, can be analysed according to community conditions. The results can then be used as comparisons when the development is adopted. Based on the aforementioned explanation, this research was conducted with the aim of reviewing articles related to various national and international databases to identify the development of the primary care assessment tools.

Method

This study contains a scoping review on the topic of developing health service assessment tools. A scoping review is a technique employed to thoroughly and comprehensively identify literature gathered from various sources related to a research topic (Widiasih *et al.*, 2020). Research questions for this study were prepared using the population, intervention, comparison, outcome (PICO) method (Eriksen and Frandsen, 2018). The question used in selecting articles for the research is: "What is the overview of the

results of the development of primary care assessment tools that have been conducted?" Information regarding the research question based on the PICO framework is presented in Figure 1.

P	Problem	PCAT enhancement
I	Intervention	Modification or adaptation to the country context
C	comparison	PCAT without adaptations or other assessment tools
O	Outcome	Benefits and impacts on the quality of health services

Figure 1. PICO Elements

The identification and selection of the articles were conducted by following stages: Identification of research topics and research questions; selection of data sources; establishment of inclusion and exclusion criteria; selection of articles and data; data analysis; and interpretation of results.

Inclusion criteria for this research are articles or studies that discuss the development of PCAT. Accordingly, all articles that do not discuss the development of PCAT were excluded.

Articles and studies were selected using a PRISMA flowchart, a tool used to map the number of articles that have been

identified, whether included or not, as well as the reasons for the exclusion (Christanti and Syafiq, 2023).

The selected articles and studies are written in English and are not limited to a particular year. The databases used for the selection include PubMed, Scopus, Science Direct, and Semantic Scholar. The keywords used in the database searches were: PCAT development or modified version of PCAT, primary health care evaluation, primary care or healthcare system, or primary healthcare effectiveness or healthcare system.

Results and Discussion

In the process of selecting suitable articles, a total of 1068 articles were identified. Out of these, 151 articles were excluded as they were duplicates, and 872 articles were excluded after reviewing their titles and abstracts. Following a subsequent review, an additional 3–5 articles were also excluded. As a result, 11 articles met the requirements set by the researchers and were further analysed. Information regarding the flow of article selection and the list of selected articles is presented in Figure 2 and Table 1.

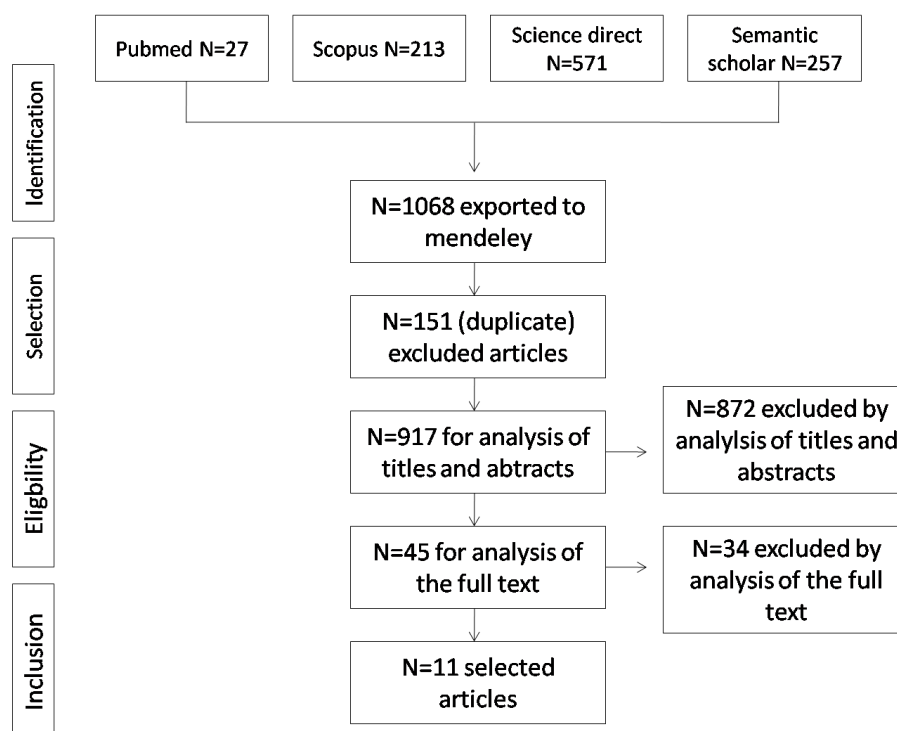


Figure 2. Articles Inclusion and Exclusion

Table 1. Selected Articles

Author, Year, Country	Title	Method/ Study Design	Development of Assessment Tools
Luckson Dullie, et al., 2018, Malawi	Development and validation of a Malawian version of the primary care assessment tool (Dullie <i>et al.</i> , 2018)	Expert assessment	PCAT-Mw Enhancement of primary care assessment tool that focuses on patients' perspective as recipient of health services
Nguyen Thai Hoa, et al., 2019, Vietnam	Development and validation of the Vietnamese primary care assessment tool – Provider version (Hoa <i>et al.</i> , 2019)	Cross-sectional survey	VN-PCAT PE Development of an assessment tool to evaluate the quality of healthcare services from the perspective of providers
Nguyen Thi Hoa, et al., 2018, Vietnam	Development and validation of the Vietnamese primary care assessment tool (Hoa <i>et al.</i> , 2018)	Quantitative cross-sectional study	VN-PCAT AE Assessment of healthcare quality services from the viewpoint of service users (patients).
Jie Mei, et al., 2015, China	The development and validation of a rapid assessment tool of primary care in China (Mei <i>et al.</i> , 2016)	Study translation and adaption as well as cross sectional survey	CR-PCAT Development of an assessment tool that focuses on the perspective of adult patients or consumers.
Wenhua Wang, et al., 2014, Tibet	Development and validation of the Tibetan primary care assessment tool (Wang <i>et al.</i> , 2014)	Cross-sectional survey	PCAT-TI Development of an assessment tool from patients' perspective.
Innocent K Besigye, et al., 2023, Uganda	Adaptation and validation of the Ugandan primary care assessment tool (Besigye & Mash, 2023)	Delphi process	UG-PCAT Development of an individual (patient-centred) assessment tool.
Hui Yang, et al., 2013, China	Development of the Chinese primary care assessment tool: data quality and measurement property (Yang <i>et al.</i> , 2013)	Cross-sectional survey	PCAT-C Development of an assessment tool through psychometric tests to examine the feasibility of the instrument.
M Isabel Pasarin, et al., 2012, Spain	Evaluation of primary care: The primary care assessment tool – facility version” for the Spanish health system (Pasarín <i>et al.</i> , 2013)	Cultural adaptation	PCAT- Facility Development of an assessment tool that focuses on facilities.

Author, Year, Country	Title	Method/ Study Design	Development of Assessment Tools
Katia B Rocha, et al., 2021, Spain	Modified version of the PCAT-A10 tool for the evaluation of primary care (Rocha <i>et al.</i> , 2021)	Cross section observational study	PCAT-A10 Modification of an assessment tool by adding mental health features.
Jeon KI Yeob, 2011, Korea	Cross cultural adaptation of the US consumer form oh the short primary care assessment tool (PCAT): the Korean consumer form of the short KC-PCAT and the Korean standard form of the short PCAT (KS PCAT) (Jeon, 2011)	Cross cultural modification	KS-PCAT Development of an assessment tool with cross-cultural modifications.
A Giraldo-osorio et al., 2017, Colombia	International collaborative process for adaptation of PCAT questionnaires to the Colombian context (Giraldo-Osorio <i>et al.</i> , 2017)	Transcultural adaptation process	PCAT modification with adult and child versions.

* Additional Statement

Based on research needs, 11 versions for PCAT development results were identified in several countries, namely: PCAT Malawi, Vietnam PCAT-PE, Vietnam PCAT-AE, CR-PCAT (China), PCAT-TI (Tanzania), UG-PCAT (Uganda), PCAT-C (China), PCAT-Facility (Spain), KS-PCAT (Standard Korean), PCAT-10 (Spain), and Colombia PCAT.

PCAT has been widely utilised to evaluate and identify deficiencies or advantages in health services provided to the community. It is generally used by countries undertaking broad and in-depth health reforms, efforts to improve the quality and resilience of health systems while addressing social functions and underlying values (Pinto and Silva, 2021). PCAT supports the success of health reform by evaluating the standard of PHC services (Adnani, 2021; Pinos, Utoyo and Yulianti, 2021).

The Primary Care Assessment Tool (PCAT) has been developed in various countries, including the United States, Brazil, and Canada. The United States was the first country to develop PCAT, and it is now widely used to evaluate the quality of primary health care (PHC). The development of PCAT has demonstrated

that the instrument is reliable and sensitive to differences in PHC quality, and it can identify dimensions or areas needing evaluation and improvement.

The development of PCAT in Canada, the United Kingdom, and the United States holds potential relevance to the conditions of primary health services in Indonesia and can serve as a reference. PCAT in Canada and the United States is designed to assess the performance of primary health care services, aligning with the Indonesian government's focus on strengthening primary health systems (CIHI, 2024). The development in the United Kingdom focuses on measuring patient health outcomes, which aligns with Indonesia's goal of improving the quality of life for its citizens (AHRQ, 2024). Adapting and tailoring PCAT to the Indonesian context is essential to creating an ideal assessment tool.

The WHO supports PCAT as a structured approach for evaluating primary health services. The tool is used to assess the extent to which primary health services demonstrate quality in terms of effectiveness and cost efficiency, based on the experiences of patients, health service providers, and health service management

(Muhammad *et al.*, 2017). The implementation of PCAT differs in each country as the development is carried out based on the specific conditions of each country. The development of PCAT in each country aims to provide an empirical basis for measuring, monitoring, improving, and continuously increasing the standard of primary healthcare in accordance with local needs or the context of the country.

PCAT-Mw is an enhancement of PCAT focusing on the main dimensions of primary healthcare as perceived by adult patients. Development of PCAT was adapted to implementation needs because Malawi did not have a valid PCAT for evaluating the quality of healthcare services based on patient feedback. The important aspects of this research included adapting PCAT. Researchers used this method to involve testing the certainty and validity of assessment tools to adopt the PCAT of South Africa (ZA-PCAT) for Malawian setting. Certainty and validity testing were carried out and evaluated by adult patients. The final step included a constructive validity analysis to ensure the level of accuracy of the PCAT-Mw tool.

The development of assessment tools in Vietnam was carried out from two perspectives, namely VN PCAT-P (providers' version) and VN PCAT-AE (consumers' version). PCAT-P focuses on the service providers' perspective, while PCAT-AE focuses on the patients/consumers' perspective. Both developments demonstrated sufficient consistency and validity to be utilized for comprehensively evaluating the standard of primary healthcare services and health care effectiveness. With these two tools, gaps between health service needs and service availability can be identified.

PCAT-TI (Tibet) was developed to measure seven areas of primary care. This tool has proven its validity and reliability as an assessment tool for measuring healthcare quality services in Tibet from patients' perspective. The results of this development show that primary health services in the regions have better performance compared to other health services and health services have an important role in service availability.

This tool is a development of the PCAT used in South Africa (PCAT-ZA). PCAT-ZA was adapted to the Ugandan context (PCAT-UG) and added a section centred on an individual or patient's needs in receiving health services. Based on the results of adaptation and validity testing, this tool was proven to be able to assess the standard of primary healthcare services in Uganda.

Similar to Vietnam, China carried out two aspects of PCAT development, namely PCAT-C (2012) and CR-PCAT (2015). In 2012, the development focused on data quality and measurement properties. The tool was developed through several steps, including the adaptation of PCAT as a tool for evaluating perceptions regarding the quality of basic healthcare services in China. Furthermore, this study also assessed the validity and reliability of PCAT-C using standard psychometric methodologies. This was the first attempt to develop a PCAT-C tool to assess patient reports and experiences regarding the quality of primary healthcare. Meanwhile, CR-PCAT was developed with a focus on the perspective of adult patients and has proven its validity as a tool for evaluating primary health services in China.

Accessibility, continuity, coordination, and comprehensive service were the goals of the development of PCAT-Facility in Spain. The tool was adapted to the Spanish context to help improve the quality of primary healthcare. The original version of PCAT was translated into Spanish and Catalan to facilitate cultural adaptation, tool observation, expert opinions, and interviews with service providers. The results of this development show that PCAT-Facility is feasible, reliable, and valid for measuring the quality of primary healthcare in Spain.

Modifications and developments were made to evaluate the health service assessment tool, resulting in a 10-item version (PCAT A10). The Spanish and Catalan versions included the perspective of adult patients with added mental health items. The latest version of the PCAT-A10 had demonstrated a high level of reliability and a strong response rate for mental health compared to the older version.

The development of PCAT that complies with Korean standards (KS-PCAT) was carried out to assess the quality of primary healthcare services from patients or consumers' viewpoint (service recipients). The tool consists of seven parts; first contact utilisation, first contact accessibility, continuous responsible care, integrated care, holistic care, community-oriented care, culturally oriented care. The results show that the KS-PCAT is a valid and credible instrument for assessing and evaluating quality of primary healthcare in Korea.

Fracolli *et al.* (2014) explained that PCAT is the most suitable tool for evaluating and improving fundamental aspects of primary healthcare services. PCAT assesses key attributes of primary healthcare services and indicators associated with the care process, including the performance of the primary healthcare providers.

Colombia has modified the children's and adult versions of PCAT to suit the country's context. The Colombian version of PCAT is an adaptation of the PCAT used in Argentina, Uruguay, and Spain. The results show that significant changes and even the deletion of assessment items in the child and adult versions were necessary to create a PCAT that meets the country's specific needs.

Indonesia uses PCAT to evaluate the quality of doctor services in primary healthcare. Hendrawan (2013) revealed that there are several conceptual differences in each sub-dimension between the original version of PCAT and the Indonesian context, particularly in the health service system. Research by Donni Hendrawan shows that the Primary Care Assessment Tool (PCAT) can measure the extent to which doctors in Indonesia's primary healthcare services meet minimum standards in delivering healthcare. The adaptation of PCAT needs to align with the cultural and health care system context of Indonesia. Essentially, this research proposes a development plan for a culturally sensitive PCAT to be used in Indonesia. With an effective assessment tool, it is expected that the performance of doctors in primary healthcare can be

measured and improved, ultimately leading to better health outcomes for the Indonesian population (Hendrawan, 2013a).

Indonesia is now in an era of health service transformation. Transforming primary health services is the first of the six pillars. Based on information from 11 articles, to further develop and adapt the Primary Care Assessment Tool (PCAT) in the Indonesian context, it is recommended that Indonesia focus on key dimensions of primary health services relevant to the country's context. Important dimensions to consider include: accessibility or the ease with which patients can obtain primary health services, coordination or the ability of the primary health service system to coordinate patient care across different levels of service, the range of primary health services available including preventive, curative, and rehabilitative services, and patient satisfaction. Additionally, the development and adaptation of PCAT in Indonesia must account for contextual factors such as geographical and cultural diversity. PCAT should be tailored to meet the needs and preferences of communities across different regions and cultures in Indonesia.

The selection of primary care assessment tools must consider the elements of the health system or service that need to be changed or improved. The key elements or aspects of primary health services include first contact, continuous, comprehensive, and coordinated care. The development of primary care assessment tools needs to be conducted to adapt to the setting of the country that adopts them (Fracolli *et al.*, 2014)

This scoping review only includes articles published in English, so there is the potential to miss important articles published in other languages.

Conclusion

PCAT is widely used across various countries to assess and enhance the standard of primary healthcare services. Its development in researched countries was typically adapted to the context of the adopting country; the tools were declared

valid and proven to be reliable and credible. Elements of health services are developed according to needs, the most dominant of which is development from the perspective of consumers (patients) as well as health service providers.

Abbreviations

PCAT: Primary Care Assessment Tool; WHO: World Health Organization; PHC: Primary Health Care; UG: Uganda; MW: Malawi; TI: Tibet; KS: Korean Standard; AE: Adult Edition; PE: Provider Edition;

Declarations

Ethics approval and consent participant

Not applicable.

Conflict of interest

The authors declared that neither personal nor professional competition can affect the performance.

Availability of Data and Materials

Not applicable.

Authors' Contribution

DSN conceived the study and revised the manuscript; AS formulated the methodology; S conducted articles selection.

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