

## Primary child health care: the largest population-based assessment in the history of Brazilian National Health System

Luiz Felipe Pinto (<http://orcid.org/0000-0002-9888-606X>)<sup>1,2</sup>  
Ana Luiza Ferreira Rodrigues Caldas (<http://orcid.org/0000-0002-6887-4471>)<sup>2</sup>

**Abstract** *The IBGE has been playing a leading role in the public policy evaluation in Brazil since 2019. After the National Health Survey (PNS) evaluated primary care services in the Unified Health System (SUS) provided to adults, in 2022, the Continuous National Household Sample Survey (PNAD-C) investigated child health. To this end, it adopted one version of the Primary Care Assessment Tool (PCAT), developed and disseminated by Starfield and Shi to assess the existence and extent of the attributes of PHC services. The target audience surveyed included children under 13 years of age, and the questionnaires were answered by their guardians/caregivers. It included all the 27 federative units of the country in random probabilistic samples, also unfolding in the Brazilian metropolitan regions and capitals. This is the largest household survey on child health assessment ever conducted in Brazil. With the PNS-2019 and the PNAD-C in 2022, IBGE inaugurates its greatest legacy for Brazilian primary health care regarding the evaluation of SUS users, with all federative units recognizing and understanding how Brazilian society evaluates health services at the first level of care.*

**Key words** *Primary health care, Child health evaluation, Household surveys, PCAT, Brazil*

<sup>1</sup> Departamento de Medicina em Atenção Primária à Saúde, Faculdade de Medicina, Universidade Federal do Rio de Janeiro. R. Laura de Araújo 36/2º parte, Cidade Nova. 20211-170 Rio de Janeiro RJ Brasil. [felipepinto.rio@medicina.ufrj.br](mailto:felipepinto.rio@medicina.ufrj.br)

<sup>2</sup> Secretaria Municipal de Saúde do Rio de Janeiro (SMS-Rio). Rio de Janeiro RJ Brasil.

## Introduction

The IBGE's mission is to portray Brazil through the production, analysis, research, and dissemination of statistical information<sup>1</sup>. Ten years ago, it started to develop specific household surveys for health. A set of topics were addressed and entered the agenda in 2019<sup>2-4</sup> with the National Health Survey (PNS 2013).

In primary health care (PHC), the Institute innovated by including a specific module to assess the adult population using the Unified Health System (SUS)<sup>5-6</sup>. The establishment of the baseline was grounded on robust scientific methodology and adopted the necessary statistical rigor. It allowed identifying the inequalities in developing PHC attributes in all Brazilian federative units. However, this was only part of the assessment, including adults over 18 years of age as the research object.

Following the planning for the evaluation of the SUS, the Continuous National Household Sample Survey (PNAD-C) began fieldwork in April 2022<sup>7</sup> to give voice to caregivers of children and adolescents under 13 years of age in thousands of households in all 27 federative units (visiting around 3,500 municipalities in the country) and using one of the modules – children's version – of the Primary Care Assessment Tool (PCAT), developed and disseminated by Starfield and Shi and adapted for home application<sup>10</sup>, to assess the existence and extent of the PHC attributes in health services<sup>8-9</sup>.

IBGE's move to modernize its household surveys is aligned with the changes in the Ministry of Health, which updated the PCAT Instrument Manual<sup>11</sup> as the primary reference for evaluating PHC services within the SUS, adopting the Family Health Strategy (ESF) care model as a basis for its development. The PNS-2019 revealed that the coverage of households registered by the Family Health teams (eSF) was 60.0% [58.9%-61.1%]<sup>12</sup>.

### **Primary Care Assessment Tool (PCAT): an international instrument for the evaluation of health services**

The "PCAT instrument family" consists of a set of mirror versions of its questionnaires in extended and reduced versions, according to the target audience to be evaluated: adult users, child users (whose guardians are the respondents of

the instruments); health professionals working with the population – doctors, nurses, and dentists; and finally, a version for managers/administrators of primary care units. The versatile use of this instrument allows confronting different perspectives, such as the comparative assessment of users and health professionals. Furthermore, it was translated, statistically validated, and used partially and totally worldwide<sup>11</sup>. This robust scientific production has been systematized in two portals; namely, that of the Johns Hopkins University (2022)<sup>13</sup>, the North American institution of origin of Starfield and Shi, and the Federal University of Rio Grande do Sul (UFRGS), of Brazilian origin, created in 2021<sup>14</sup>.

The methodology of the extended version of the instrument allows calculating a score for each of the four essential PHC attributes (access, longitudinality, care coordination, and comprehensiveness) and its three derivatives (community orientation, family orientation, and cultural competency). A general score is also calculated as the general mean score of the attributes. The abridged version adapted by IBGE for household application in PNAD-C 2022 allows for calculating a single synthesis score, called the "general score". This score is calculated from the answers obtained in each question using a Likert scale and can be transformed into a score from 0 to 10 through a simple mathematical formula<sup>11</sup>.

Despite its great potential, the PCAT investigates aspects of structure and processes in health care and should be complemented with result indicators. Usually, researchers bridge this gap with the inclusion of epidemiological indicators and clinical outcomes, such as Trindade in 2007<sup>15</sup>, who measured the association between the quality of PHC and the arterial hypertension care process with the scores calculated by the PCAT in the city of Porto Alegre. In this case, in the other modules of household surveys, the IBGE inquires with the resident regarding the selected conditions (hypertension, diabetes, heart disease, asthma, depression, and chronic lung disease). In the 2019 PNS, the question "has any doctor ever diagnosed you with...?" aimed to map the prevalence of people with the referred disease diagnosis and, per the outcomes achieved, statistically significant differences were observed between having the referred disease or not. From this perspective, the evaluation (PCAT score) was more positive in the first case than in the second<sup>3</sup>.

### **Continuous National Household Sample Survey (PNAD-C): IBGE's pioneering spirit in evaluating child health in Brazil.**

The year 2022 will be historically marked within child health assessment in PHC from the perspective of the children's legal guardians. Based on the robust and statistically validated methodology, using mobile collection devices (MCD), the IBGE interviewers started the largest household-based survey ever conducted in the SUS by the Institute. The probability cluster sampling will cover more than 200,000 households in all 27 Brazilian federative units, following the PNAD-C sampling plan.

The PNAD-C has Primary Sampling Units (PSU), with several Brazilian geographic areas, which ensures representation from North to South, involving more than 15,000 census tracts and about 3,500 municipalities (62.2% of the total, consisting of all capitals, metropolitan regions, and inland mesoregions).

The special Child PHC supplement is part of the PNAD-C and will be formed by the Primary Care Assessment Tool (PCAT) – an abridged and validated version for children under 13 years of age. In this version, the set of attributes investigated totals 31 questions, with the addition of nine questions that address the doctor-patient relationship in an instrument entitled “PDQR9”<sup>16</sup> and a synthesis question that involves the so-called “net promoter score” (NPS)<sup>17</sup> evaluation of the question “*on a scale of 0 to 10, where “0” is would not recommend at all and “10” would definitely recommend, how much would you recommend this “health service” to a friend ) or family?*”

The main corpus of the PNAD-C contains sociodemographic and economic issues, which allows comparing it with the score calculated by the PCAT to assess possible inequalities in access, use, care coordination, longitudinality, comprehensiveness, and community and family orientation, providing relevant inputs for the reformulation of public policies within the SUS.

Some authors emphasize that assessing child health can serve as a tracer event for the expanded evaluation of health services; in other words,

given the specificities of this level of care and the need for health services to be organized to provide quality care to the population, suggesting indicating processes to be adjusted in the provision of comprehensive care to the populations<sup>18-20</sup>, which is also reinforced by the National Policy for Comprehensive Child Health Care (PNAISC)<sup>21</sup>.

### **Challenges and prospects**

The PNAD-C is consolidated as the largest household survey on child health assessment ever conducted in Brazil (n > 200,000 households in around 3,500 municipalities) with representative local samples, external validity – statistically wise – and that, together with the PNS-2019, allow drawing a baseline to assess users of PHC services within the SUS.

The challenges of carrying out face-to-face fieldwork, visiting Brazilian municipalities – inland cities, from North to South, with peculiar geographical access – and collecting data in a short period (three months) show the logistic operation's magnitude coordinated by the IBGE, with its unique expertise and national reach, among the Brazilian institutions covered.

From the PNS-2019 and the PNAD-C in 2022, the IBGE inaugurates its greatest legacy for Brazilian PHC, regarding the evaluation of SUS users, with all federation units recognizing and understanding how Brazilian society evaluates health services at the first level of care. Specifically, regarding the PNAD-C, the Ministry of Health should provide resources so that the IBGE investigates and evaluates health services quarterly. Every quarter, an essential PHC attribute (access, care coordination, longitudinality, and comprehensiveness) could be measured by the PCAT, integrating a “PHC Module” in the PNAD-C within the Institute's situational research dissemination. Thus, the evaluation culture would become institutionalized and perpetuated as a public policy of the State, a significant promotion for the primary Brazilian social policies, as is already done by the IBGE with the “Education” Module, which is researched annually in the PNAD-C.

### **Collaborations**

The two authors equally participated in the elaboration of the paper. LF Pinto performed the final review.

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