

Attributes of primary health care for children in Brazil

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Abstract. Background: Primary health care (PHC) can be viewed as a strategy to organization and reorganization of health systems. Based on Starfield (1994), primary care is based on essential and derivative attributes of PHC. The essential attributes are first contact access, longitudinality, comprehensiveness and coordination and the derivative attributes are family orientation, community orientation, and cultural competency. With regard to child health, the National Comprehensive Child Health Care Policy (PNAISC) summarizes how Brazilian child health care is organized, and indicates PHC as the central point of this care and as the coordinator of the other points of the health care networking. The goal of this paper was to evaluate the presence and extent of the attributes of PHC in child health care in Brazil. **Methods:** Systematic review conducted on Scopus with articles published between 2017 and 2021, focusing on PHC for children in Brazil and that used Primary Care Assessment Tool - Brazil (PCATool - Brazil) to evaluate the attributes of PHC. **Results:** Child PHC in Brazil had a satisfactory result on the some of the essential attributes of PHC and an unsatisfactory result on the derivative ones. The essential attributes first contact – utilization and coordination - information systems had an adequate outcome, while first contact – access didn't perform well. Concerning longitudinality and coordination – care integration, the care provided present disparities between regions. The different outcomes on comprehensiveness is related to the type of service provided. Furthermore, the derivative attributes family and community orientation didn't have a good outcome. **Conclusion:** Based on the results, child PHC in Brazil has strong attributes as first contact – utilization and coordination - information systems. However, it doesn't present a satisfactory extent of all PHC attributes, with an unequal longitudinality and coordination – care integration among regions and a best comprehensiveness on FHS (Family Health Strategy). The North and Central-West regions need a better representation on studies concerning the attributes of child PHC.

Keywords. Primary health care, child health, evaluation of health services, quality of health care, attributes of PHC, PCATool – Brazil.

1. Introduction

The Alma-Ata Conference, held in 1978, deeply changed the way health was seen, by calling “Health for All” and proposing primary health care (PHC) as a key strategy to achieve universal health access [1, 2]. PHC can be viewed as a strategy to organization and reorganization of health systems.

The Brazilian health system, called Unified Health System (SUS), was created in 1988 by the 1988 Federal Constitution [3] and regulated by the Law No. 8.080 of 1990, named Organic Law of Health [4]. This law presents the doctrinal and organizational principles of SUS. Its principles are universality, equity, and integrality and its organizational

principles are decentralization, regionalization and hierarchy, and social participation [4].

The health reform that culminated with the creation of SUS started with the Brazilian Health Reform Movement in the decade of 1970 [5], which proposed health as a social and political issue, not focused only on the biomedical model [3]. Before 1988, healthcare was provided by insurance restricted to workers in the formal market, excluding part of the population and the Ministry of Health was responsible for preventable actions, as health campaigns [5]. With the 1988 Constitution, health was seen a right and a duty of the state to assure it, through social and political policies and services to health promotion, prevention and rehabilitation [3].

SUS makes efforts to reorganize the health system prioritizing primary care [5], based on its attributes. To Starfield, primary care is based on essential and derivative attributes of PHC [6]. The essential attributes are first contact access (accessibility and utilization of health services), longitudinality (lasting relation between health professionals and patients, regardless the presence of health problems, covering the children's continuity of care by the same health professional over a period of time, their knowledge about the child's clinical history and family), comprehensiveness (a group of actions and health services according to different population's health needs), and coordination (involves system information - patient's records and child's book -, and integration of care - referrals to specialists and counter-referral) [7]. The derivative attributes are family orientation (the individual is considerate within his environment, family context, exposure to threats to health and limited family resources), community orientation (patient social context, which includes the knowledge of characteristics of community health, its health needs and available resources), and cultural competency (adjustment of the health professionals to the population cultural characteristics) [7].

In Brazil, primary care is organized and implemented through Family Health Strategy (FHS) and traditional basic health unit (BHU). The FHS proposes a comprehensive concept of health, with healthcare focused on family and communities, provided by multi-professional teams and including promotion and prevention of diseases [8], while BHU provides a physician-centered care [9].

With regard to child health, this group is considered a priority in public health policies, due to its specifics in growth and development [10]. From that perspective, in 2015 was created the National Comprehensive Child Health Care Policy (PNAISC) [11], which summarizes how comprehensive child health care is organized. In this sense, PHC has an important role as the central point of child care and as the coordinator of the other points of the health care networking. In this networking, there are the National Immunization Program, the Health at School Program, the Stork Network, and other points of attention to specific publics. The policies related to child health have an emphasis on prevention and promotion of health, likewise PHC [10]. Nevertheless, these policies are not completely reflected in a comprehensive child care in Brazil [10], which makes it important to study the presence and extent of the PHC attributes in child health care. This article aimed to evaluate the presence and extent of the attributes of PHC in child health care in Brazil.

2. Research Methods

This study is a systematic review of the attributes of PHC in child health care in Brazil. One author worked in the selection process, data extraction, and quality assessment. The search was done on the Scopus

database, using the terms: ("primary health care" OR "primary care") AND ("child* care" OR "child* health" OR "infant care" OR "infant health" OR "pediatric care" OR "pediatric health") AND (Brazil*). The terms were researched on title, abstract, and keywords, limited to studies published between 2017 and 2021 written in English, Portuguese or Spanish. The search was done on January 29th, 2022. The eligibility criteria were to answer the question "How is child PHC in Brazil?" on title and abstract. The eligible articles were further read and only included the ones that measured attributes of child PHC through PCATool- Brazil. Literature reviews were excluded. The following information was extracted from the included materials: author, year, study location, sample, objective, item evaluated and results. To evaluate the quality of the included articles was used the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) [12]. Articles that met at least 70% of the items were included.

One model to evaluate PHC is the Primary Care Assessment Tool (PCATool). Starfield and colleagues created this tool as an instrument to measure the extent of adequate primary care in the United States, in a context where this assessment didn't exist [13]. The instrument present questions emphasizing each attribute of PHC and has an adult, child and health professional versions [13]. The PCATool was adapted to the Brazilian reality and received the name Primary Care Assessment Tool Brazil (PCATool - Brazil), with a version to children, adults and health professionals [14], being the most used tool to evaluate pediatric PHC in Brazil [15]. The PCATool - Brazil [14] has questions organized in letters from A to J that address degree of affiliation (A), essential attributes (B-H), and derivative attributes (I-J). The answer for each question varies from 1 to 4 (1: definitely not, 2: probably not, 3: probably yes, 4: definitely yes) and is used to measure the score of each attribute. The essential score is calculated by the media of the scores of the essential attributes, while the general score is the media of the score of all attributes. The grade varying from 1 to 4 can be transformed in a 1 to 10 scale. The scores can also be seen as high ($\geq 6,6$) or low ($< 6,6$) [14].

3. Results

Figure 1 shows the process of identification and selection of the studies. 107 articles were found on Scopus, of which one was excluded because it was duplicated. A total of 106 articles were screened, and 88 were excluded because they failed to meet the eligibility criteria. Of the 18 studies that passed the screening, six were excluded because they didn't mention the attributes of PHC, one had population overlapping, one was a systematic review and four didn't use PCATool - Brazil to measure the attributes of PHC, totaling 12 excluded studies. Six studies were included in the review.

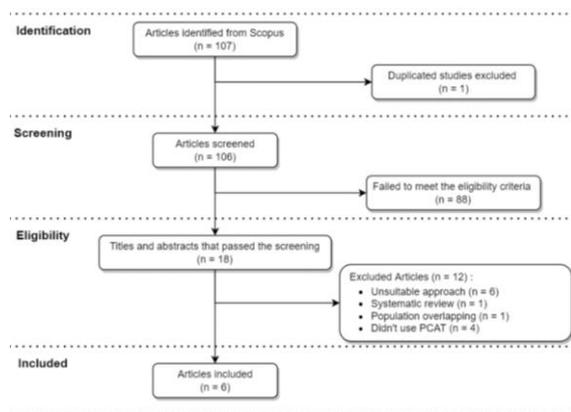


Fig. 1 - Flow diagram of the article identification and selection process.

Table 1 presents some characteristics of the included articles. They had a quantitative approach and utilized PCATool - Brazil as the evaluation instrument [10, 16-20]. In 66,6%, parents or caregivers evaluated the health service [10, 17, 18, 20], and health professionals evaluated the service in the other 33,3% of studies [16, 19]. About the location, 33,3% of articles studied the Northeast [10, 18], 50% the South [10, 17, 19], and 33,3% the Southeast region [16, 20], and one study approached states from both the South and Northeast region [10]. The North and Central-West regions were not represented in this study.

Table 2 presents the scores of PHC attributes of the

included studies in the review. The attributes the most studied were longitudinality, and comprehensiveness – services provided, presented in all included articles [10, 16-20].

The coordination attribute can be divided into information systems and care integration [14]. The scores were higher on information systems than on care integration [10, 16, 17, 20]. The grades above 6,6 on the first one evidence an adequate level of the structure of coordination.

The longitudinality attribute had a high score on the Southeast region [16, 19, 20], a low score on Northeast regions [10, 18], and it varied on South region studies, one study presented a high score [19] while two presented a low one [10, 17]. Regarding first-contact - access, utilization had a high score in all studies that assessed this component [10, 17, 18, 20]. However, the accessibility and access had an unsatisfactory score in all studies [10, 16-20].

Concerning comprehensiveness, services with FHS or mixed BHU achieved a satisfactory score on available services [10, 19]. One service with the FHS didn't achieve 6,6 [20], but had a better mark than other services. P with FHS or mixed BHU also had a better score on services provided [10, 16, 18-20].

The derivative attributes family and community orientation had a cut-off lower than 6,6 [10, 20], showing a low family and community orientation.

Tab. 1 - Characteristics of the articles included in the review.

Article code. Author (year)	Study location	Sample	Objective
A01. Melo et al. (2019) [16]	A city in São Paulo	53 health professionals, physicians and nurses	To analyze the PHC attributes in breastfeeding, comparing certified services by Amamenta Brasil with non-certified services
A02. Santos et al. (2018) [10]	Cascavel (PR), Londrina (PR), and João Pessoa (PB)	531 caregivers of children under 10 years old in Cascavel, 609 in Londrina and 344 in João Pessoa, totalizing 1484 caregivers.	To evaluate the model of primary care the most orientated to child primary care, according to the essential attributes of PHC: FHU (Family Health Unit), BHU or mixed BHU
A03. Araujo et al. (2017) [17]	Cascavel (PR)	23 traditional basic health units, with 548 caregivers of children	To identify the presence and extent of essential attributes in PHC services
A04. Pedraza et al. (2017) [18]	Two municipalities of Paraíba	321 mothers of children under five years old, 153 from one municipality and 168 from other	To evaluate the primary care attributes in children under five years old on FHS
A05. Piovesan et al. (2017) [19]	Rio Grande do Sul (RS)	527 health professionals of 25 cities in RS	To evaluate the PHC quality of services that treat children and adolescents with HIV
A06. Pinto et al. (2017) [20]	Rio de Janeiro (RJ)	802 services users	To evaluate the extent of PHC attributes comparing Rocinha with other areas in the municipality of Rio de Janeiro

4. Discussion

This study found that child PHC in Brazil has a strong utilization of health services by children when a problem is present (first contact - utilization) and an adequate use of patient's records and child's book (coordination - information systems) through all the regions studied. However, the access to primary care is limited (first contact - access) and there is a poor orientation to the family and social context of the patient (family and community orientation). The care provided present disparities between regions, especially concerning a lasting relation between health professionals and patients (longitudinality) and referrals to specialists (coordination - care integration). The extent of available and provided services (comprehensiveness) is larger on FHS than on traditional BHU.

The North and Central-West regions were not represented in this study. The underrepresentation of these regions is in good agreement with Silva et al.'s [15], that had a higher number of studies from Northeast, Southeast and South regions than from other regions in their systematic review. A superior

presence of studies in the Northeast Region may be explained by the great extent of FHS in this area, motivating more studies about PHC attributes. The major presence of Southeast and South studies may be due to a larger number of higher education and research institutions in these regions [15].

On the assessment of the attribute first-contact - access, utilization had a high score while accessibility had an unsatisfactory score. The scores on accessibility indicate the existence of barriers to an adequate health access. This result is comparable with other studies, in which access had the lowest score of the PHC attributes [21]. The low level of access can be explained by the long time to get a consultation or in the waiting time to be attended on the same day. Moreover, it also may be related to a greater service demand [22], due to the number of acute infections in children. The difficult in access PHC ruins it as the gatekeeper of the health system. For utilization, the good scores support the result of other studies [21, 23]. It is clear the different performance between utilization and accessibility within the same attribute, as seen in other studies [21, 23]. Travassos [24] argues that utilization can't be completely understood by access, because there

Tab. 2 – Scores of primary healthcare attributes and PCATool – Brazil score of studies included in the review.

Evaluated attributes	Articles									
	A01		A02		A03		A04		A05	
	FHU	Traditional BHU	Mixed BHU	City 1	City 2	PHC service	FHS			
Degree of affiliation	-	8	7,6	8,3	-	-	-	-	-	8,46
First Contact - Access	-	-	-	-	-	-	-	3,96	3,8	5,42
First Contact - Utilization	-	8,3	8,5	8,5	8,6	7,96	6,61	-	-	8,44
Fist Contact Access - Accessibility	3,8	5	5,6	5,2	5,5	5,02	4,13	-	-	-
Longitudinality	6,7	6,5	5,8	6,3	6,1	6,49	4,92	6,74	7,17	6,78
Coordination	-	-	-	-	-	-	-	-	-	5,73
Coordination - Care Integration	6,5	6,5	7	7,5	6,9	-	-	7,03	6,87	-
Coordination - Information Systems	8,3	7,5	7,8	5,6	7,4	-	-	8,19	8,24	7,34
Comprehensiveness - Available Services	-	5,2	6	6,7	6	-	-	6,49	7,17	6,15
Comprehensiveness - Services Provided	6,6	5,3	6,1	6,9	6,1	6,8	4,79	6,37	7,66	6,5
Family Orientation	-	5,3	4,4	5	4,4	-	-	-	-	6,21
Community Orientation	-	5,8	4,9	5,9	5,1	-	-	-	-	5,61
Essential score	-	6,6	6,8	7,1	6,6	-	-	6,47	6,82	6,98
General score	-	6,4	6,4	6,7	6,3	-	-	-	-	6,77

are other factors associated with the use of services, such as individual preposition, context, and quality of care. This may explain why the utilization scores were high, while access had a poor outcome.

The longitudinality attribute had a different score based on the region, obtaining a high score on the Southeast, a low score on Northeast, and a varied score on the South region. Other studies with a satisfactory result on longitudinality [22, 25] were conducted in the Southeast region, while the ones that didn't perform well on this attribute [26, 27] were on the South region, in line with the results of this review.

Regarding coordination, information system had an effective performance in all regions, while care integration was insufficient in the Southeast region. The general good outcome on coordination is in agreement with Oliveira et al. [23] and Silva et al. [21] and on disagreement with Leão et al. [22] and Mesquita et al. [25]. The unsatisfactory result of the Southeast region on care integration is in accordance with Harzheim et al [28].

Concerning comprehensiveness, services with FHS or mixed BHU had better marks than services without FHS. The best results of FHS in this review confirms the findings of Oliveira et al [23]. This result may be explained by the conception of health to FHS, which proposes a comprehensive health care [8]. However, a better outcome in FHS doesn't mean the extent of this attribute is satisfactory, as manifested by Pinto et al. [20] and confirmed by other studies [21, 23]. Above that, regardless of the type of service, studies show a weak comprehensiveness orientation [21, 22, 23, 25, 28]. Moreover, it is possible to notice disparities among health care services, indicating an unequal availability and provision of services in PHC.

This review shows a weak family and community orientation in all included articles, which is compatible with other studies [22, 23, 25, 28]. Damasceno et al. [29] affirm that families are not the center of PHC, which usually emphasizes curative actions and a care based on the biomedical model. The FHS still struggles to achieve its goal to provide healthcare focused on family and community, despite being established as a model to counterpoint the biomedical model [8].

These results present limitations, since the selection process and the screening for methodological quality was realized by only one author. In order to minimize this problem, the selection process was done twice, in different days. Another limitation of this study is the fact that several states of Brazil were not represented, excluding the North and Central-West regions from the sample. Therefore, this systematic review represents child PHC only on the Northeast, Southeast and South regions of Brazil. Nevertheless, the representativeness of regions of Brazil are in accordance with Silva et al.'s [15] systematic review,

that had a higher number of studies from Northeast, Southeast and South regions than from other regions. Future research concerning child primary care should be done in the North and Central-West Regions to learn about child care in these regions and to have a more accurate picture of child PHC in Brazil.

5. Conclusion

This study indicates that child PHC in Brazil doesn't present a satisfactory extent of all PHC attributes. The child health care has strong attributes as first contact – utilization and coordination - information systems in the regions studied. However, first contact – access is unsatisfactory, as well as the derivative attributes family and community orientation. The results also reveal an unequal longitudinality and coordination – care integration among regions and a best comprehensiveness on FHS. Besides, the North and Central-West regions need a better representation in this topic.

This article contributes to the recognition of the presence and extent of attributes of PHC in child health care in Brazil. This is important to actors in the field, to understand problems related to the lack of each attribute and to find ways to reorganize and to improve child PHC in Brazil.

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