EVALUATION OF PRIMARY HEALTH CARE FOR CHILDREN UNDER 5 YEARS OLD IN THE MUNICIPALITY OF LAGARTO-SE

Avaliação da assistência primária à saúde das crianças menores de 5 anos no município de Lagarto-SE

Evaluación de atención primaria salud de los niños menores de 5 años en el municipio de Lagarto-SE

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ABSTRACT
Objective: to evaluate the effectiveness of primary care for children under five years of age enrolled in a Family Health Clinic, Lagarto-SE. Method: This is a results research, quantitative approach and cross-sectional design, in which the Primary Care Assessment Tool - Child Version was used to assess the attributes of access, longitudinality, coordination, completeness, family orientation and community orientation. Results: 50 adults were interviewed, responsible for children up to five years of age enrolled in the service. The evaluation was positive for the degree of affiliation and the coordination-information system attribute, and the others did not reach the minimum reference score. Conclusion: attributes reveal barriers to service access, lack of continuity of care, fragility in referral and counter-referral, and commitment to communication between health-patient professionals.

Descriptors: Child Health; Primary Health Care; Family Health Strategy.

RESUMEN
Objetivo: Evaluar la efectividad de los niños de atención primaria de menos de cinco años de edad los niños inscritos en una Clínica de Salud de la Familia, Lagarto-SE. M étodo: Se trata de unos resultados de búsqueda, un enfoque cuantitativo y diseño transversal, que se utilizó el Primary Care Assessment Tool- Versión para niños para una evaluación de atributos de acceso, longitudinalidad, la coordinación, la integralidad, orientado a la familia y orientada a la comunidad. Resultados: un total de 50 adultos responsables de los niños menores de cinco años de edad inscritos en el servicio. La evaluación fue positiva para el grado de afiliación y el sistema...
INTRODUCTION

Since 1978, with the Alma-Ata Conference, several authors have been discussing the definitions of Primary Care (PC). The Pan American Health Organization (PAHO), in 2005, established that PC should be the basis of national health systems, since it is the best strategy to produce sustainable improvements and ensure health equity. 1

PC should be the preferred entry point for users of the Sistema Único de Saúde (SUS) [Unified Health System] and the way to communicate with the entire health network. It is represented by the Basic Health Units (BHUs) because they are located near where users live, work, study, and live. Therefore, they play a key role in ensuring universal access to health care. 2

In order to bring these health services closer to communities, the Programa Saúde da Família (PSF) [Family Health Program], now known as Family Health Strategy (FHS), was implemented in 1994. This program aims to strengthen community participation through a health model based on the promotion of collective and preventive actions and capable of overcoming the assistance logic and. 3

According to STARFIELD, in order for health care providers to be considered efficient, they must have the four essential PC attributes: first contact access, completeness, care coordination, and longitudinality. These attributes are interrelated to the derived attributes, including family counseling, community counseling, and cultural competence. 4

In the list of essential attributes, first contact access is related to the accessibility of health services to the individual and the use of a set of services in the face of a new problem that makes the population seek PC. Longitudinality highlights the importance of continuing care, as well as the interpersonal relationship between users and health care workers based on trust. Completeness involves integral care for users considering the biopsychosocial nature of the health-disease process, offering adequate promotion, prevention, cure, and rehabilitation within the context of PC, in addition to the referral and counter-referral processes. Care coordination establishes that the health care providers must integrate all forms of care that the patient receives, either delivered by health care workers or present in the patients’ records, so as to establish continuity of care. 1

The derived attributes are also considered as efficiency parameters for PC services. Family counseling is related to the assessment of individual needs considering the family context. Community counseling recognizes the community's health needs through epidemiological data and contact with the local population. Finally, cultural competency is intended to understand the specific population's cultural characteristics and facilitate the relationship and communication with it. 1

Therefore, PC have qualitative, efficient, and equitable health systems covering the entire population, including children. PC services should offer priority care for children, ensuring their healthy growth and basic care for prevention, health promotion, and recovery through practical actions, skills, and knowledge. 5,6

The basic care offered to children by PC units is aimed at reducing morbidity and mortality rates. The child care program is a useful strategy to minimize mortality rates and the occurrence of childhood developmental disabilities. The function of this program is to promote care for prevention, promotion, protection, recovery, and rehabilitation of children aged up to 5 years old. However, despite several public health policies aimed at the child population, few of these actions have become concrete and effective, especially considering the neonatal period, which is responsible for 70% of early deaths. Even with a significant reduction in child mortality observed in recent years in Brazil, if we consider that more than 60% of these early deaths could have been avoided by means of PC actions performed by resolutive and qualified health services, it becomes clear the deficiency of health actions in this area and demonstrates the need to investigate the causes. 5

Hence, it is necessary to evaluate the effectiveness of the first level of health care provided to children in order to increase accessibility, strengthen the link, ensure continuity of care and integrality, accountability, humanization, equity, and social participation. One way of evaluating this effectiveness would be to analyze compliance with these principles. 1

Bearing in mind the aforesaid, the objective of this study was to evaluate the effectiveness of PC for children under five years old registered at the Clínica de Saúde da Família Dr. Davi Marcos de Lima in Lagarto city, Sergipe State, Brazil.

METHODS

Study type

Considering its nature, this cross-sectional study with a quantitative approach consists of a results research, since it is intended to document the efficiency of health services. The Donabedian's health environment criteria 7 were
evaluated, including administrative and organizational structure, the decision-making process, administration and intervention, and the final clinical results.

**Study location**

Data collection was carried out at the homes of children registered at *Clínica de Saúde da Família Dr. Davi Marcos de Lima* in the Lagarto city by using the Primary Care Assessment Tool (PCATool) for children.

**Inclusion and exclusion criteria**

Inclusion criteria were parents or guardians of children aged up to 5 years old who were registered at a family health unit and were receiving follow-up child care, aged 18 years old or more, and agreed to participate in the study by signing the informed consent document.

The guardians who were not at home at the time of the visit were excluded.

**Sample**

This study was performed with a sample of parents or guardians of 50 children aged up to 5 years old registered at *Clínica de Saúde da Família Dr. Davi Marcos de Lima*. For sample selection, the distribution of families in microareas covered by Community Health Agents (CHAs) was considered. However, only two CHAs accepted to accompany the researchers during the visits at the randomly selected children's homes. Thus, each CHA was responsible for 25 children.

**Ethical aspects**

This study complied with the guidelines stated in Resolution No. 466/2012 of the National Health Council, Health Ministry and was approved by the Research Ethics Committee of the Hospital Universitário de Aracajú/Universidade Federal de Sergipe (HU-UFS) under the Certificado de Apresentação para Apreciação Ética (CAAE) [Certificate of Presentation for Ethical Appreciation] No. 60433516.5.0000.5546 and Legal Opinion No. 100010/2016 on September 28th, 2016. The guardians who were not at home at the time of the visit were excluded.

**Study tools**

The PCATool questionnaire was developed in the United States of America by the STARFIELD et al. in 2002 and has been translated and validated in different countries, including Brazil. It consists of 55 questions, which evaluate the health units in which the users receive care, their degree of affiliation, and the four essential attributes and three attributes derived from PC.

The questionnaire used had questions about the degree of affiliation with the health service, first contact access (use), first contact access (access), longitudinality, coordination (care integration), coordination (information system), integrity (services available), integrity (services provided), family guidance, and community counseling. For each question, the following answers were possible: “surely yes” (value = 4); “probably yes” (value = 3); “probably not” (value = 2); “surely not” (value = 1) and “I don’t know/remember” (value = 9). Score calculation for each attribute or component was performed by averaging the values of each answer.

In addition to the PCATool, another questionnaire was applied to assess the socioeconomic aspects of the children participating in the study. It contained four objective questions and was prepared by the researchers. The purpose of collecting these data was to determine the social and economic profile of these children.

**Data collection procedure**

Data collection took place after the study approval by the Research Ethics Committee. The parents or guardians were visited at their home; for whom the objective of the research was presented and, after agreeing to participate in the study, they signed the informed consent document. Then, the PCATool and the socioeconomic assessment questionnaires were applied.

The questionnaires were applied by the researchers and the answers were recorded on the instruments.

**Data processing and analysis**

Concerning the data on sample characterization obtained through the PCATool questionnaire, they were described statistically by means of absolute and relative numbers. The analysis of answers obtained through the PCATool questionnaire respected the result of the forecasted calculation for the items and components of its structure. Microsoft Word software was used to achieve this.

To obtain the results and evaluate all attribute scores, a simple arithmetic average of the answer values was calculated. According to the PCATool manual, the possible answers for each of the items are: “surely yes” (value = 4), “probably yes” (value = 3), “probably not” (value = 2), “surely not” (value = 1) and “I don’t know/remember” (value = 9). Scores greater than or equal to 6.6 were considered adequate for PC.
structure and process aspects of the PC unit in question but also evaluates the health services’ degree of guidance.

The characterization of the socioeconomic level of the children interviewed was obtained through the application of the socioeconomic evaluation questionnaire. Composed of closed questions, this questionnaire addressed the family’s economic situation, housing conditions, number of siblings, and mother’s education level.

RESULTS

A total of 50 subjects have participated of this study, where the great majority were females (90%) within the age group from 18 to 60 years old. Considering the participants, 82% were mothers with an income of one minimum wage (44%), having complete elementary school (52%), living in their residence (52%), and having one or two children (60%).

Concerning the degree of affiliation, the health service was rated 8.9 on a scale of 1 to 10. The average PC attribute scores are shown in Table 1.

Regarding the essential and general scores presented by the study participants, which measures the degree of guidance for PC, they were low (≤6.6). The essential score was 4.9 and the general score was 5.2. In order to obtain the essential PC score, the averages of the six essential attributes were added to the average of the user’s degree of affiliation with the health care service. To calculate the general score, the averages of the eight validated attributes were added to the average of the degree of affiliation.

With regard to the attributes, the predominance of scores below 6.6 was observed in isolation. Table 2 shows the items constituting the attribute coordination-care integration, which presented the lowest average score (2.7).

Table 1 - Average values of the PC attributes provided by the study participants.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Absolute number</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>First contact access (use)</td>
<td>50</td>
<td>0.0</td>
<td>10</td>
<td>6.4</td>
</tr>
<tr>
<td>First contact access (access)</td>
<td>50</td>
<td>0.0</td>
<td>8.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Longitudinality</td>
<td>50</td>
<td>0.0</td>
<td>9.0</td>
<td>4.6</td>
</tr>
<tr>
<td>Coordination-care integration</td>
<td>09</td>
<td>0.0</td>
<td>10</td>
<td>2.7</td>
</tr>
<tr>
<td>Coordination-information system</td>
<td>50</td>
<td>0.0</td>
<td>10</td>
<td>7.4</td>
</tr>
<tr>
<td>Integrality-available services</td>
<td>50</td>
<td>0.0</td>
<td>9.0</td>
<td>3.8</td>
</tr>
<tr>
<td>Integrality-services provided</td>
<td>50</td>
<td>0.0</td>
<td>10</td>
<td>4.0</td>
</tr>
<tr>
<td>Family counseling</td>
<td>50</td>
<td>0.0</td>
<td>10</td>
<td>4.5</td>
</tr>
<tr>
<td>Community counseling</td>
<td>50</td>
<td>2.5</td>
<td>10</td>
<td>6.5</td>
</tr>
</tbody>
</table>

Table 2 - Percentage distribution of the participants’ answers to the questions on the attribute coordination-care integration.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Surely yes</th>
<th>Probably yes</th>
<th>Probably not</th>
<th>Surely not</th>
<th>I don’t know/remember</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2. Has the health service referred the child to a specialized service?</td>
<td>38</td>
<td>0</td>
<td>0</td>
<td>62</td>
<td>0</td>
</tr>
<tr>
<td>E3. Does the doctor/nurse know about the consultation in the specialized service?</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>E4. Did the doctor/nurse know the results of the consultation?</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>E5. Did the doctor/nurse talk to you about what happened during the consultation?</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>0</td>
</tr>
<tr>
<td>E6. Was the doctor/nurse interested in the quality of care that was given in the specialized service?</td>
<td>25</td>
<td>0</td>
<td>0</td>
<td>75</td>
<td>0</td>
</tr>
</tbody>
</table>
In the case of the attribute integrality-services available, it obtained the second-lowest average score (3.8), as can be seen in Table 3, in which the items are represented in percentage values.

**Table 3** - Percentage distribution of the participants’ answers to the questions on the attribute integrality-services available.

<table>
<thead>
<tr>
<th>Question: Indicate whether these services or guidelines are available at the clinic</th>
<th>Answers to the questions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surely yes</td>
</tr>
<tr>
<td>G1. Vaccines (immunization).</td>
<td>100</td>
</tr>
<tr>
<td>G2. Check whether your family can participate in any social welfare program.</td>
<td>48</td>
</tr>
<tr>
<td>G3. Family planning.</td>
<td>74</td>
</tr>
<tr>
<td>G4. Nutritional supplementation program.</td>
<td>10</td>
</tr>
<tr>
<td>G5. Treatment of dangerous drugs or counseling for their use.</td>
<td>16</td>
</tr>
<tr>
<td>G6. Counseling for mental health problems.</td>
<td>26</td>
</tr>
<tr>
<td>G7. Cutting suture.</td>
<td>24</td>
</tr>
<tr>
<td>G8. Counseling and request for anti-HIV tests.</td>
<td>60</td>
</tr>
<tr>
<td>G9. Identification of visual problems.</td>
<td>12</td>
</tr>
</tbody>
</table>

**Table 4** addresses the percentage distribution of the participants’ answers to the questions on the attribute integrality-services provided, which was the third attribute with the lowest average value (4.0).

**Table 4** - Percentage distribution of the participants’ answers to the questions on the attribute integrality-services provided.

<table>
<thead>
<tr>
<th>Question: Were any of these matters discussed with you during your child's appointment?</th>
<th>Answers to the questions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Surely yes</td>
</tr>
<tr>
<td>H1. Guidelines on child health, such as healthy eating, good hygiene, and proper sleep.</td>
<td>72</td>
</tr>
<tr>
<td>H2. Home safety.</td>
<td>42</td>
</tr>
<tr>
<td>H3. Changes in child growth and development.</td>
<td>48</td>
</tr>
<tr>
<td>H4. Ways to deal with your child's behavior problems.</td>
<td>18</td>
</tr>
<tr>
<td>H5. Ways to keep your child safe.</td>
<td>22</td>
</tr>
</tbody>
</table>
The only attribute that obtained an average value above the standard score was the attribute coordination-information system, with an average value of 7.4. Its items are represented in percentage values in Table 5.

Table 5 - Percentage distribution of the participants' answers to the questions on the attribute coordination-information system.

<table>
<thead>
<tr>
<th>Question:</th>
<th>Answers to the questions (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F1. When you take your child to the health unit, do you carry any record (for example a vaccination card)?</td>
<td>Surely yes</td>
</tr>
<tr>
<td></td>
<td>100</td>
</tr>
<tr>
<td>F2. Is his/her medical record always available during the appointment?</td>
<td>94</td>
</tr>
<tr>
<td>F3. Could you read your child's medical record if you wanted to?</td>
<td>36</td>
</tr>
</tbody>
</table>

DISCUSSION

The essential and derived PC attributes will be discussed according to guidelines established by STARFIELD in 2002, which indicates that scores equal to or above 6.6 can be considered "high scores", which demonstrates that the service is a PC provider.4

Degree of affiliation, access, logitudinality, completeness, coordination, and family and community counseling were some of the items evaluated.

The degree of affiliation is not considered an essential attribute as it aims to identify the referral health service for the care of children.1 This attribute obtained a positive evaluation, demonstrating that the children's families were highly affiliated with the health service that they use. A study, which was conducted in eleven municipalities of Minas Gerais State, Brazil, to evaluate the care provided to children aged up to two years old in FHS units, demonstrated that the degree of affiliation was positively assessed.8,5

The positive evaluation of the degree of affiliation might be associated with the link and access to services provided by FHS units. Furthermore, the link between teams and affiliated people guarantees the continuity of health actions according to the foundations of the Política Nacional de Atenção Básica (PNAB) [National Primary Care Policy].8

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The attribute first contact access was evaluated in two contexts: use and access. Both of them obtained scores below the suggested one. It is believed that the "use" context is related to the reduced number of consultations offered in the unit since the child care service is not yet structured and is mostly offered by the physician based on the distribution of records and curative care. This event may make patients and legal guardians to seek care in other health service units or even in private health facilities.10

As for the attribute accessibility, the study participants were questioned about the possibility of attending an appointment on the same day that it was requested if a child becomes ill, waiting time, ease of scheduling an appointment, waiting time before appointments, and care offered by the service. A lower average than the one considered ideal for PC was observed, thus showing the difficulty in accessing the health service.

Failure to provide accessibility makes it more difficult for people to access the health service since this attribute aids the user to access health services whenever he/she needs them easily and conveniently. Accessibility can be influenced by geographical, organizational, socio-cultural, and economic aspects.11

Given this framework, longitudinality refers to the follow-up care delivered by PC workers to patients attending health care units over time. It also refers to the therapeutic relationship of trust between health care workers and patients. This attribute is considered a central feature of this level of health care.12 Here, this item reached a score of 4.6, which demonstrates lack of continuity of care and effectiveness. When questioned if the physician/nurse knew their child's complete medical record, 34% of the respondents answered "surely not". A similar result was also found in a study conducted in the municipality of Colombo, Paraná State, Brazil, which aimed to evaluate the presence and extent of essential and derived attributes of PC for children from the perspective of their relatives and compare the performance of BHUs and Family Health Units concerning these attributes.10
One of the problems that interfere with the maintenance of longitudinality is the turnover of health care workers in the unit. When questioned if it was the same physician or nurse who provided care for their children in every appointment, only 54% of the study participants answered “surely yes”. This shows that the relationship between physicians/nurses and patients was superficial and poor.

The turnover of health care workers contributes to the loss of strategic human resources, breaking the continuity of care, generating higher training costs, interrupting health programs, and causing losses to users.13 Considering the attribute coordination, it aims to provide the user with services and information that fully meet their health needs through different points of the health care network, being of relative importance for other attributes.11 In the PCATool questionnaire, coordination is divided into coordination-care integration and coordination-information system.

Regarding the attribute coordination-care integration, the participants needed initially to answer if the child was referred to a specialist while receiving follow-up care by an FHS worker. Considering the total number of participants, 8 (16%) provided an affirmative answer, which resulted in the lowest score compared to the other attributes. This reveals the difficulty of establishing an integrated and continuing care. When questioned if their child’s physician knew about the outcomes of the consultation, 75% of the participants answered “surely not”. This demonstrates fragility in the counter-referral process among the services.

The high score of the attribute coordination-information system shows that there is adequate availability of medical records presenting child development information.5,8 This is related to the use of standardized instruments, such as vaccination cards and records for monitoring the children's weight and growth, and the use of instruments such as the children's scale and anthropometer, which positively contribute to the evaluation of the health service structure. According to DONABIDEAN, the physical, human, material, and financial resources needed for health care should be evaluated.14

The attribute integrity revealed that the first level of health care should be organized in such a way that the patient has access to all types of health services, even if some of them cannot be offered efficiently. This includes referrals to secondary and tertiary services.4 The PCATool questionnaire divides the attribute integrity into two elements: integrity-services available and integrity-services provided.

As for the attribute integrity-services available, it obtained the second-lowest average score (3.8), which was similar to the result of a study conducted in the municipality of Montes Claros, Minas Gerais State, Brazil, which aimed to assess the PC attributes for the child care provided by FHS teams.15 This demonstrates that the interviewees were unaware of some services that were provided in the FHS evaluated. Only the variables vaccines (immunization), family planning or contraceptive methods, and counseling and request for anti-HIV tests were evaluated positively, while the other variables were perceived as less than the ideal ones.

In relation to the attribute integrity-services provided, the score was classified as low (4.0). This attribute assesses whether certain issues essential to children were discussed during the consultations. Regarding the items “home safety”, such as storing medicines safely, “ways to deal with your child’s behavior problems” and “ways to keep your child safe”, such as avoiding falls from heights or keeping children away from the stove, 48%, 70% and 64% of the participants answered “surely not”, respectively. These results fall short of what was established for PC.

According to the 2014 report of the National Early Childhood Network on accidents with children aged up to 9 years old, the main causes of deaths were traffic accidents (33%), followed by drowning (23%), suffocation (23% burns (7%), falls (6%), and others (6%). Health care workers need to provide guidance on how to keep children safe and away from deadly situations since accidents are considered as public health problems.16 According to the Atenção Integrada às Doenças Prevalentes na Infância (AIDPI) [Integrated Care for Prevalent Childhood Diseases] strategy, it is fundamental that nurses/physicians provide practical information related to child care for parents during consultations.17

Regarding the attribute family counseling, the score obtained was 4.5. When questioned if the professional asked about the existence of diseases, such as cancer, alcoholism, and depression, in the child’s family, 56% of the participants answered “surely yes”. The other question answers were mostly “certainly not”. This indicates that the multidisciplinary team lacked the knowledge of family factors related to the origin and treatment of diseases.4

When questioned if the physician/nurse asked them about their ideas and opinions about the treatment of and care for their children, 56% of the study participants answered “surely not”, showing a lack of interest. The child development surveillance manual within the context of AIDPI provides an instrument that assesses the mothers’ opinions on their children’s development. According to this manual, valuing the mothers’ perceptions is important since they stay in contact with their children and observe them most of the time.17

With regard to the attribute community counseling, it involves the knowledge of the social context in which
the community is inserted. The study participants were questioned about home visits made by health care workers, whether the professionals knew about the health problems in the community, whether any survey was performed to investigate the most common health problems in the neighborhood, and whether the community was invited to participate in Health Councils.

The score obtained for this attribute (6.5) was close to the standard value (6.6). This demonstrates the health professionals’ low interest in knowing the problems of the community and its limited participation in the services and actions carried out by FHS workers of the health care unit studied.

Given these results, the overall score for all attributes was 5.2, in other words, the PC assumptions were not being effectively included in the routine of the child care workers.

A study conducted in the Oviedo city, Spain, whose one of its objectives was to know the health care policy towards children and adolescents in need of specialized care. Its findings showed a lack of coverage of health services at the first level of care to meet the needs of this clientele.

The size of the area and the difficulty of finding CHAs to provide support during data collection were important limitations of this study. The CHAs establish the bridge between BHUs and communities. Access to the children’s families becomes difficult without them, in other words, they help to enter into the families’ homes.

**CONCLUSION**

The study findings revealed that the scores of the PC attributes were unsatisfactory, implying that a large part of these attributes was not implemented in child care. Accordingly, there were organizational barriers that hindered the delivery of resolutive and quality PC.

It is necessary to reorganize the working process so that the health service could facilitate the scheduling of consultations, decrease in waiting time, continuity of care, effective referral and contra-referral processes, availability of suturing and other services, and raising awareness of the importance of the relationship between health care workers and patients. Furthermore, health care workers should establish bonds with the children’s families and approach the communities where they live.

It is worth emphasizing that to achieve new changes in terms of organization, structure, and behavior. Moreover, all people involved in the FHS work process should be held accountable.

**REFERÊNCIAS**


