Original Article

TEXTO & CONTEXTO ENFERMAGEM
TEXT & CONTEXT NURSING TEXTO & CONTEXTO ENFERMERÍA

FACTORS ASSOCIATED WITH PNEUMONIA AND DIARRHEA IN CHILDREN AND QUALITY OF PRIMARY HEALTH CARE

Janaina Carvalho Braz Macedo[1]
Ricardo Alexandre Arcêncio[1]
Paula Carolina Bejo Wolkers[2]
Antônio Carlos Vieira Ramos[1]
Ana Paula Contiero Toninato[1]
Maria Cândida de Carvalho Furtado[1]

[1]Universidade de São Paulo, Escola de Enfermagem de Ribeirão Preto. Ribeirão Preto, São Paulo, Brasil.
[2]Universidade Federal de Uberlândia. Uberlândia, Minas Gerais, Brasil.

ABSTRACT

Objective: to investigate factors associated with the use and quality of Primary Health Care, as well as the occurrence of pneumonia and diarrhea in children under one year.
Method: cross-sectional study conducted with 317 caregivers of 56 Family Health teams from Juazeiro do Norte, Ceará, from August 2014 to October 2015, using the child version of the Primary Care Assessment Tool, child version.
Results: in the logistic adjustment, children received assistance (OR: 0.54; 0.32-0.91) and accessibility to the Primary Health Care Unit (OR: 0.49; 0.31-0.76). identified as possible protective factors for episodes of diarrhea. The variables associated with pneumonia were unsatisfactory access (ORaj: 2.13; 95% CI 1.18-3.82), a likely risk factor, and coordination (ORaj: 0.33, 95% CI 0.12-0,94), as a probable protection factor.
Conclusion: primary care attendance resulted in a higher chance of avoiding hospitalization for pneumonia, a condition considered sensitive to care in this care model. Complementing family income and children's accessibility to the health unit were protective factors for episodes of diarrhea. The search to ensure the presence and extension of the Primary Health Care attributes has the potential to positively modify the child's health and, therefore, both should be ensured as rights of this population.

DESCRIPTORS: Primary Health Care. Child health. Child care. Health assessment. Integrated care for prevalent childhood diseases.

HOW CITED: Macedo JCB, Arcêncio RA, Wolkers PCB, Ramos ACV, Toninato APC, Furtado MCC. Factors associated with pneumonia and diarrhea in children and quality of primary health care. Texto Contexto Enferm [Internet]. 2019 [cited YEAR MONTH DAY]; 28:e20180225. Available from: http://dx.doi.org/10.1590/1980-265X-TCE-2018-0225

FATORES ASSOCIADOS A PNEUMONIAS E DIARREIA EM CRIANÇAS E QUALIDADE DA ATENÇÃO PRIMÁRIA À SAÚDE

RESUMO

Objetivo: investigar fatores associados ao uso e à qualidade da Atenção Primária à Saúde, bem como à ocorrência de pneumonia e diarreia em crianças menores de um ano.
Método: estudo transversal, realizado com 317 cuidadores de 56 equipes de Saúde da Família de Juazeiro do Norte, Ceará, no período de agosto de 2014 a outubro de 2015, utilizando o instrumento *Primary Care Assessment Tool,* versão criança.
Resultados: no ajuste logístico, criança receber auxílio (OR:0,54;0,32-0,91) e acessibilidade à unidade de Atenção Primária à Saúde (OR:0,49;0,31-0,76), foram identificadas como possíveis fatores de proteção para episódios de diarreia. As variáveis associadas à pneumonia foram acesso não satisfatório (ORaj:2,13; IC 95%1,18-3,82), um provável fator de risco, e coordenação (ORaj:0,33, IC95%0,12-0,94), como provável fator de proteção.
Conclusão: o atendimento na Atenção Primária resultou em maior chance de não hospitalização por pneumonia, condição considerada sensível aos cuidados nesse modelo de atenção. Complementação da renda familiar e acessibilidade da criança à unidade de saúde apresentaram-se como fatores de proteção para episódios de diarreia. A busca por garantir a presença e extensão dos atributos da Atenção Primária à Saúde possui potencial para modificar positivamente a saúde da criança e, portanto, ambas devem ser asseguradas como direitos dessa população.

DESCRITORES: Atenção primária à saúde. Saúde da criança. Cuidado da criança. Avaliação em saúde. Atenção integrada às doenças prevalentes na infância.

FACTORES ASOCIADOS A LA NEUMONÍA Y DIARREIA EN NIÑOS Y LA CALIDAD DE LA ATENCIÓN PRIMARIA DE LA SALUD

RESUMEN

Objetivo: investigar los factores asociados al uso y a la calidad de la Atención Primaria de la Salud, así como la aparición de neumonía y diarrea en niños menores de un año.
Método: estudio transversal realizado con 317 cuidadores de 56 equipos de salud familiar de Juazeiro do Norte, Ceará, de agosto de 2014 a octubre de 2015, utilizando la herramienta *Primary Care Assessment Tool*, versión infantil.
Resultados: en el ajuste logístico, los niños recibieron asistencia (OR:0,54;0,32-0,91) y accesibilidad a la Unidad de la Atención Primaria de la Salud (OR:0,49;0,31-0,76), identificados como posibles factores de protección para los episodios de diarrea. Las variables asociadas con la neumonía fueron el acceso insatisfactorio (ORaj:2,13; IC 95%1,18-3,82), un factor de riesgo probable y coordinación (ORaj:0,33, IC95%0,12-0,94), como factor probable de protección.
Conclusión: la asistencia en la atención primaria resultó en mayor probabilidad de no hospitalización por neumonía, una condición que se considera sensible en los cuidados en este modelo de atención. El complemento de los ingresos familiares y la accesibilidad de los niños a la unidad de salud fueron factores protectores para los episodios de diarrea. La búsqueda para garantizar la presencia y extensión de los atributos de la Atención Primaria de la Salud tiene el potencial de modificar positivamente la salud del niño y, por lo tanto, ambos deben garantizarse como derechos de esta población.

DESCRIPTORES: Atención Primaria de la salud. Salud infantil. Cuidado de niños. Evaluación de la salud. Atención integral de enfermedades infantiles prevalentes.

INTRODUCTION

Public policies for child health care in Brazil have sought to respond to the demands of this population by providing adequate care. In this context, the National Policy for Comprehensive Child Health Care (PNAISC) is highlighted, launched in 2015, which intends to promote and protect child health through comprehensive care from conception to the age of nine.[1] PNAISC also seeks to comply with the guidelines related to the organization of actions and services in the health network and is guided by principles, including absolute priority for children, universal access to health and comprehensive care.[1]

In order to assist children and contribute to positive health indicator results, studies highlight the importance of Primary Health Care (PHC).[2–4] Regarding the care model, favorable outcomes for child health were presented in a study indicating that Family Health Strategy coverage greater than 50% had a protective effect in relation to post-neonatal mortality and coverage of 50% or more were protective factors for hospitalizations for pneumonia.[5]

Among the morbidities that affect the child in the first years of life, respiratory and gastrointestinal diseases are among the highest regarding number of occurrence. These, in turn, are the most frequent causes of hospitalization in children under five years of age, and are considered hospitalizations for conditions related to primary care (ICSAP).[6–9]

Authors who investigated ICSAP rates in Brazil found variations in children under five years of age, depending on the region: 82.4% in Paraíba, [6] 78% in Goiânia, [7] 65.2% in São Paulo, [8] 46.7% in Rio de Janeiro; [9] 38.7% in Cuiabá; [10] 23.3% in Paraná.[11] These investigations have helped to monitor the performance of care provided in the Family Health Strategy (FHS), as these hospitalizations are an important public health indicator in terms of quality, accessibility and effectiveness of primary health care.[12–13]

Despite the efforts and advances made, which have reduced child morbidity and mortality, meeting child health needs from the perspective of comprehensiveness is still a major challenge for managers, health professionals and Brazilian society in general.[14] Therefore, it is necessary to develop evaluative processes that allow us to understand if health actions and PHC principles are being directed to child health care.[15–16] Although some studies have occasionally evaluated child health programs and services in regions of great social vulnerability of the country,[15,17–18] permanent assessment is strongly recommended by governmental and non-governmental agencies.

In Ceará, a study that analyzed the temporal trend of ICSAPs from 2000 to 2012 showed a reduction among children under five years. However, for children under one year of age, the rate of ICSAPs increased 15-fold, which shows failures in PHC that need to be investigated.[19]

Thus, it is proposed, to study a municipality of this region as an area of research, in order to understand how the care has been provided to children under one year. It is understood that this phase of life is a time of great vulnerability and that the health actions offered in primary care have an important influence on the reduction of child health indicators.

Considering the child health care policies in Brazil and the importance of the care provided in the FHS to minimize the occurrence of diseases in children under one year, this study aimed to investigate factors associated with the use and quality of primary health care, as well as the occurrence of pneumonia and diarrhea in children under one year.

METHOD

This is a cross-sectional study conducted in the city of Juazeiro do Norte, Ceará, Brazil. The Donabedian model of health assessment was adopted as the methodological reference.[20] When this study was prepared in 2013, the municipality had 85% Family Health Strategy coverage and the PHC network had 63 Health teams, with 56 in the urban area and seven in the rural area.[21]

Data collection occurred in the 56 Family Health teams in the urban area. The sample size of the participating children was based on 2012 data available from the Primary Care Information System (SIAB); A total of 1,810 children under one year old belonging to the listed FHUs were obtained. The following parameters were adopted: 95% confidence level, 80% test power and 5% tolerable sampling error (d2). As we were not aware of the variance of the sample investigated or any other parameter in the population, a 50% probability of children treated by the PHC was assumed.

After adjusting the sample for finite populations, the final minimum sample contained 317 children. Considering a 10% loss, 349 children were included in the study, selected in a simple probabilistic manner, using SPSS software. At the time of data collection, a total of 385 caregivers were approached, however, 52 were not at home in both visits; 15 had changed areas and one refused to participate, giving a total of 317 participants.

Inclusion criteria were: children under one year of age who belonged to the FHU area, who used the SUS as a health care service and who had previously been attended at least once. The choice to include caregivers who had already attended the FHU for child care is justified by being able to contribute to the investigation by providing their opinions on health actions and services directed to the child.

After identifying the potential participants and the Health Units where they were treated, the research team was trained by consulting the SIAB. Family members were previously contacted by telephone or at home in order to schedule data collection. If the mother / caregiver was not found, the research assistant returned at a different time and day, and if not found after the second visit, the child was excluded from the study. Data collection took place between August 2014 and October 2015, through interviews at the children's homes with their respective caregivers. They lasted an average of 30 minutes and began after identification of the primary caregiver, presentation of the study objective and signing of an informed consent form.

Regarding socioeconomic characterization of the family, a form with directed questions related to direct or indirect aspects of the child's health was applied, such as the interviewee's identification information and the family and the child's own socio-demographic information. The following information about the child was collected: age, diet, illness episodes, hospitalizations, social benefits. The child version of the Primary Care Assessment Instrument (PCATool) was also used as the interview transcript.[22]

Two pass data verification was performed and then stored in Excel spreadsheets to avoid possible errors and were then analyzed using STATA®, version 12.0. The PHC attribute scores were obtained and then converted. Scores >6.6 were considered adequate, indicating the presence and extension of the evaluated attributes; scores below this cutoff were considered inadequate.[22]

In the descriptive analysis, the univariate analysis was performed by calculating the measures of central tendency (mean, median and standard deviation) and dispersion (standard deviation). The episode of diarrhea variables (yes or no) and pneumonia (yes or no), as conditions sensitive to PHC, were considered dependent and tested in relation to the child's sociodemographic variables, obstetric history and PHC attributes, by applying the chi-square test and Yates correction or Fisher's exact, when necessary.

Variables with p <0.2 were selected for multiple logistic regression analysis using the manual backward - forward stepwise strategy. The permanence criteria of the variables in the final model took into consideration the level of significance and the quality of the adjustment of the model, using the likelihood function and the Hosmer-Lemeshow test as references.[23] Cox & Snell R2 and Nagelkerke R2 tests were also used to verify the adequacy of the model, and then selecting the one with the highest Cox-Snell R2. The SPSS version 19.0 software in this stage of the study. The probability of making a type I error was set at 5% as statistically significant (p <0.05).

All ethical and legal precepts governed by research involving human beings have been obeyed.

RESULTS

Among the 317 respondents, 292 (92.1%) were mothers; 25 (7.9%) reported being responsible for the child; the majority (99.1%) were female. In this study, participants were called caregivers, as defined by the primary caregiver as the person who has the best knowledge regarding the child's health.[22] The average age of the children was 11.6 months (SD=5.6). This is a high average, due to the fact that they were selected at the beginning of the study and also due to the strike which occured among health care workers during the data collection period, which delayed the researchers' access to the interviewees. Regarding caregivers, the mean age was 28.6 years (SD=28.4); family income of 1.2 minimum wages (SD=1.0) and na average of 1.4 (SD=0.8) people working per family.

The average number of children at home was 1.9 (SD=1.1). Regarding receiving government financial aid, 30.3% responded positively and 68.8% received no assistance at all. Regarding the practice of breastfeeding, 161 (50.8%) caregivers reported that the child "breastfeeds"; 154 (48.6%) said they did not offer the breast; and 24.3% of the children recieved mixed feeding. Regarding the health conditions of the child from birth to the time of the interview, 63.4% had no episodes of diarrhea and 92.4% did not develop pneumonia; 92.7% caregivers did not report any health problems. Regarding this last item, 18 (5.7%) reported health problems in children, such as anemia, reflux, allergic bronchitis, murmur, hypothyroidism, hydrocele and strabismus; 79.5% of children had never been hospitalized.

Regarding health services, 181 (57.1%) caregivers indicated using the same health service to care for children and elected the nurse as the person who knew them best. However, 136 (46.9%) caregivers stated that the health services which they used to take children were not always the ones who knew them best, including the service that would be responsible for the care, which indicates non-compliance in this significant number of users to a particular health service. During the evaluation of PHC attributes (Table 1), Coordination (Information Systems) and Comprehensiveness (Services Provided) revealed a higher degree of PHC orientation in the services evaluated by the caregivers.

First Contact Access (service use) had a low score and, by specifying each item evaluated in this attribute, it was found that caregivers used the same health service for the child's routine care, and recognized the need for a doctor referral when she needed to be seen by specialty. However, faced with the emergence of a new problem, they claimed to look for another service. Despite the low score for the First Contact Access subitem (accessibility), respondents identified two aspects that approached the acceptable score for good PHC guidance: child care on the same day they sought the service for a health assessment and the how easy it was to schedule routine consultation at the service. However, they complained about the long waiting time.

Table 1 – Quality of Primary Health Care in child care according to general and essential attributes and scores. Juazeiro do Norte, CE, Brazil, 2014-2015. (n = 317)

Items	Average	Median	SD	Min-Max	CI 95%
Attributes					
Access - Use	6,2	6,7	2,9	0,0 - 10,0	5,9 - 6,5
Access - Accessibility	5,5	5,6	1,9	0,0 - 10,0	5,2 - 5,7
Longitudinality	6,2	6,4	1,9	1,5 - 10,0	5,9 - 6,4
Coordination - Care Integration	4,7	6,0	3,6	0,0 - 10,0	3,9 - 5,5
Coordination - Information System	7,6	7,8	1,9	1,1 - 10,0	7,4 - 7,8
Integrality - Available Services	2,6	2,6	0,6	1,0 - 4,0	5,0 - 5,5
Integrality - Services Provided	6,8	7,3	3,1	0,0 - 10,0	6,5 - 7,2
Family Orientation	3,6	3,3	2,6	0,0 - 10,0	3,3 - 3,8
Community Guidance	5,4	5,0	2,3	0,0 - 10,0	5,1 - 5,6
Scores					
Essential	6,1	6,3	1,7	2,6 - 9,2	5,8 - 6,5
General	5,9	5,9	1,6	2,7 -9,2	5,5 - 6,2

Although some items assessed for Longitudinality obtained high scores, a low score was obtained as a whole. The caregivers reinforced the orientation of the PHC health service, stating that the same professional accompanies the child during the care, which brought the caregiver closer and would enable better understanding in the dialogue for child care. However, they stated that during the service, the professional only paid attention to the issue which brought the child to the health service.

Coordination (integration of care) was assessed by 98 (30.9%) caregivers who experience child care from a specialist and responded negatively to this experience. The score for Coordination (information system) was high, and this gives the evaluated service a strong degree of guidance regarding documents and records regarding the care of children. Comprehensiveness (available services) obtained a low score. Among the various services available at health the facilities, caregivers only identified immunization, social benefits and family planning. Regarding the services provided, the high score reveals recognition of the guidance received for care, including a broad approach to aspects involving the child's growth and development.

The score for each analyzed item of the Family Orientation attribute did not approach the established limit (≥6.6), except for the recognition by the caregivers that the doctor or nurse, at some point of the visits, asked about illnesses or health problems in the child's family. In the Community Guidance context, home visits and community knowledge obtained, respectively, a score above and near the cut off score. It is important to highlight that the caregivers have little or no recognition of the incentive given by health professionals in the evaluated services to stimulate the social participation of families.

Also, according to Table 1, the Essential and General scores obtained low averages, which is a result of the negative assessment made by caregivers in most of the items contained in the PCATool. As most of the scores related to the essential attributes were below the established limit, the Essential Score was moved down. The same occurred with the General score which, despite the Coordination (Information system) and Integrality (services provided) attributes reaching values considered adequate, most of the evaluated PHC attributes presented insufficient averages, which contributed to the low General score.

When analyzing the sociodemographic conditions of children and their families, as well as the obstetric antecedents of mothers and the quality of PHC, according to their attributes, in the services

in which the children were attended, we also sought to analyze the association of two dependent variables. considered sensitive conditions for Primary Care: diarrhea and pneumonia.

Table 2 shows the relationship of these factors with the diarrhea outcome through bivariate analysis. The variables p <0.2, which refers to water treatment, family allowance, history of abortion or miscarraige of mother and sibling who died before 5 years of age, were taken to the logistic regression model to verify which ones fit best. The results of these analyzes are presented in Table 3.

Table 2 – Sociodemographic variables and obstetric history associated with diarrhea of children followed by Primary Health Care. Juazeiro do Norte, CE, Brazil, 2014-2015. (n = 317)

Independent variables	Diarrhea		Odds Ratio	CI 95%	p value
	No	Yes			
	n	n	Ref		
Marital status					
Married	114	66			
Not married	84	41	1,18	0,73 - 1,91	0,542
Place of residence: invaded					
No	189	101			
Yes	09	06	0,80	0,27-2,31	0,783
Water supply: Public network					
Yes	186	105			
No	12	02	3,38	0,74-15,42	0,150*
Water treatment in home					
Yes	50	25			
No	148	82	1,10	0,63-1,92	0,781
Feaces/urine: Sewer system					
Yes	151	79			
No	47	28	1,13	0,66-1,95	0,677
Child receives Family Allowance / other					
Yes	51	43			
No	147	64	0,51	0,31-0,85	0,013*
Delivery: normal					
Yes	111	55			
No	87	52	1,20	0,75-1,93	0,471
Parity					
≤ 3	166	95			
> 3	32	12	1,52	0,75-3,10	0,306
Abortion or miscarraige					
No	151	94			
Yes	47	13	2,25	1,15-4,38	0,016*
Length of gestation					
37-40 week	124	53			
<37 or >40 weeks	74	54	0,58	0,36-0,94	0,29
Numer of prenatal consultations					
≥7	109	60			
<7	89	47	1,04	0,64-1,67	0,904

Table 2 – Cont.

Independent variables	Diarrhea		Odds Ratio	CI 95%	p value
	No	Yes			
	n	n	Ref		
Birth weight					
≥ 2500g	172	98			
< 2500g	26	9	1,64	0,74-3,65	0,261
Sibling died younger than 5 years of age					
No	196	103			
Yes	2	4	0,26	0,04-1,45	0,189*

*p <0.2 Chi-square test with Yates correction or Fisher's exact

According to Table 3, the only variables that remained in the model were children receiving assistance (OR: 0.54; 0.32-0.91) and accessibility to the Primary Health Care Unit (OR: 0.49; 0.31 - 0.76), both were identified as possible protective factors for episodes of diarrhea. By meand of the Nagelkerke R2 test, it was observed that the final model explains 13.4% of the episodes of diarrhea found in the study.

The variables tested for the pneumonia outcome are described in Table 4. Only two presented p<0.2: destination for waste and household water supply, which were taken to the subsequent stage of logistic regression analysis.

Table 3 – Statistics obtained in multivariate logistic adjustment investigating factors associated with diarrhea in a study on children's access to Primary Health Care. Juazeiro do Norte, CE, Brazil, 2014-2015. (n = 317)

Adjusted model*	Adjusted Odds Ratio	CI 95%	p value†
Water supply: Public network	2,91	0,62-13,58	0,176
Receives Family allowance	0,54	0,32-0,91	0,020‡
Abortion or miscarraige	1,72	0,81-3,66	0,157
Sibling died younger than 5 years of age	0,20	0,03-1,38	0,104
Access - Use	0,88	0,63-1,22	0,451
Access - Accessability	0,51	0,31-0,82	0,006‡
Longitudinality	1,72	1,00-2,96	0,050
Coordination	0,68	0,41-1,13	0,138
Integrality: Available Services	0,94	0,54-1,65	0,831
Integrality: Services Provided	0,94	0,69-1,29	0,705
Family Orientation	1,17	0,78-1,77	0,446
Community Orientation	0,71	0,462-1,10	0,115

* Hosmer and Lemeshow test p = 0.415 / Cox and Snell R square = 0.098 / Nagelkerke = 0.134. † Wald test applied. ‡p<0.05.

Table 4 – Sociodemographic variables and obstetric history associated with pneumonia in a study on children's access to Primary Health Care. Juazeiro do Norte, CE, Brazil, 2014-2015. (n = 317)

Independent variables	Pneumonia		Odds Ratio	CI 95%	p value*
	Yes	No			
	n	n	Ref		
Marital status					
Married	13	167			
Not married	4	121	0,42	0,13-1,33	0,203
Place of residence: invaded					
No	16	274			
Yes	1	14	1,22	0,15-9,89	0,586
Water supply: Public network					
Yes	14	277			
No	3	11	5,39	1,35-21,55	0,036*
Water treatment in home					
Yes	15	215			
No	2	73	0,39	0,08-1,75	0,259
Feaces/urine: Sewer system					
Yes	16	214			
No	1	74	5,53	0,72-42,44	0,082*
Child receives Family Allowance / other					
No	12	199			
Yes	5	89	0,93	0,31-2,72	1,000
Delivery: normal					
Yes	11	155			
No	6	133	1,57	0,56-4,36	0,458
Parity					
≤3	15	246			
>3	2	42	0,78	0,17-3,54	1,000
Abortion or miscarraige					
No	16	229			
Yes	1	59	0,243	0,03-1,86	0,210
Length of gestation					
37– 40 weeks	11	166			
<37 ou >40 weeks	6	122	0,74	0,26-2,06	0,622
Number of prenatal consultations					
≥7	11	158			
<7	6	130	0,66	0,23-1,84	0,464
Birth weight					
≥2500g	14	256			
<2500g	3	32	1,71	0,46-6,29	0,426
Sibling died younger than 5 years of age					
No	17	282			
Yes	0	6	0,94	0,91-0,97	1,000

* p<0.2 Chi-square test with Yates correction or Fisher's exact.

Regarding the pneumonia outcome, the results presented in Table 5 were obtained in the multivariate analysis. The Hosmer and Lemeshow test gave a p value of 0.209 (<0.05), thus accepting Ho, that There are no significant differences between the results predicted by the model and those observed.

The model shows that the variables associated with pneumonia were unsatisfactory access /use of services (ORaj: 2.13; 95% CI 1.18-3.82), considered a probable risk and coordination factor (ORaj: 0.33), 95% CI 0.12-0.94), which seems a likely protective factor. The model, according to the Nagelkerke R2 test, explains 8.7% of the identified cases of pneumonia.

Table 5 – Statistics obtained in multivariate logistic adjustment investigating factors associated with pneumonia in a study on children's access to Primary Health Care. Juazeiro do Norte, CE, Brazil, 2014-2015. (n = 317)

Adjusted Model*	Adjusted Odds Ratio	CI 95%	p value†
Water supply: Public network	0,27	0,05-1,31	0,106
Feaces/urine: Sewer system	4,99	0,63-39,88	0,129
Access - Use§	2,13	1,18-3,82	0,012‡
Access - Accessability	1,31	0,44-3,92	0,618
Longitudinality	1,04	0,33-3,29	0,941
Coordination‖	0,33	0,12-0,94	0,037‡
Comprehensiveness: Available Services	0,73	0,21-2,53	0,617
Comprehensiveness: Services provided	1,01	0,57-2,12	0,78
Family orientation	0,85	0,35-2,10	0,732
Community orientation	1,70	0,72-4,02	0,224

*Hosmer and Lemeshow test p=0.209 / Cox and Snell R square =0.031 / Nagelkerke =0.087. †Wald test applied. ‡p<0.05. §Average 6.2 score (unsatisfactory); || Information systems coordination: Average of 7,6 obtained in this attribute (satisfactory).

DISCUSSION

Although the FHS is identified as a reference service for child health care by most caregivers, corroborating Brazilian research studies,[7,24–26] a high percentage of referrals to other child care network services have been identified. According to studies,[26–27] the attendance of pediatric consultations outside the FHS revealed that the municipality still has health service organization practices focused on the traditional care model. In addition, this result demonstrates that caregivers tend to misjudge the service offered by the FHS because they do not use it often. Other evaluative studies also revealed both low percentage of FHS indication as the main referral service for child health care, with 56.3%,[26] and superior results, with 100% 15 and 88.2%.[17]

In the interpretation of the mean values of the attribute scores, most obtained low scores, similar to other investigations,[17–18] and only Coordination (information system) and Integrality (services provided) showed good results. In this context, it can be stated that the new care model aimed at guaranteeing equity and comprehensive health actions has not yet succeeded in replacing the medical-hospital care paradigm centered on the biological aspects of the health-disease process. Thus, it is necessary to improve the supply of health services, seeking to ensure the quality and efficiency of PHC and, consequently, consolidate the principles of SUS.[28–29]

The data also show that while the FHS is considered a regular source of child care due to its high degree of affiliation, as identified in another study,[30] it has not fulfilled its role as a gateway to health services, given the low score of the Access attribute, differing from studies.[15,26] Authors reveal

that parents who increased the use of primary services, decreased the demand for emergency care, [31] hence the importance of making them aware of these spaces for their care, health promotion and disease prevention.[31–32]

Regarding Longitudinality, a similar score was found in some studies,[17,29–30] but contrasted with others.[15–16,24–26,28,33–34] Although the professionals responsible for the care of children are always the same and there is good communication between staff and caregivers, the FHS was evaluated as a place that does not know the family and social context of the child. It is possible that this communication is punctual, restricted to the reason for the appointment, and this indicates that the FHS model is not in line with the principles proposed by the PHC, which is aimed at providing integrated care to the user.[26] The substitution for another model that assumes the individual and family as the center of care is one of the premises for strengthening SUS.[35]

The unsatisfactory score for Coordination (Care Integration) is possibly explained by the difficulty reported by caregivers to schedule specialized appointments, despite the municipality having a central appointment service for this type of consultation. In addition, the low percentage of referrals and the negative evaluation of this attribute are related to the negative evaluation of Longitudinality, since the health care of children, in this study, was punctual and isolated, which makes continuity of care impossible, as noted in other studies.[30,35] In contrast, the Coordination (information system) obtained the highest score of all evaluated attributes. Although the caregivers did not have access to the medical records, which weakened the attribute as a whole, they always took some health records belonging to the child to the consultations and mentioned that the medical records were constantly available during the care, which contributed to the high average score, corroborating other findings.[28] In this scenario, it is essential to establish a health care network that integrates care levels, as well as support and logistics systems, to sustain communication flow and processes for social production in health.[36]

Comprehensiveness (available services) recorded the worst average score, corroborating studies[24,26,30] and differing from one.[28] This result can be explained by the lack of some services in the evaluated health units and also because many caregivers were unable to respond on the availability of services. The subitem services provided had a satisfactory score, similar to one study;[18] and differing from others.[15,18,24,26,28,30] It is evident that, when analyzing the attribute isolation, the results indicate that health teams perform health promotion and prevention actions. However, by associating it with the low Longitudinality score, it is inferred that the caregivers evaluated the attribute based on punctual care, restricted to the reason that led the child to the service. Thus, the persistence of the biomedical model in relation to preventive actions is perceived, [37] which expresses the need for extended care, with the user as the protagonist in this process.[38]

Family Orientation is considered an attribute associated with Longitudinality, since child health care requires greater interaction with the family. Thus, the mean unsatisfactory score, as well as Longitudinality, shows that health practices aimed at knowledge of the family context are still poor and reinforce the traditional medical care model, according to other findings.[18,24–26,30,39–41] In this context, it is necessary to sensitize health professionals so that their practices are based on a theoretical framework that assumes a family focus and promotes comprehensive knowledge of the child's health needs.[40–41]

The Community Guidance also had na insufficient score, corroborting with some studies[18,24–26,30,39–41] and differing from another.[16] Thus, it is inferred that, for respondents, health services have no direct relationship with population, do not recognize the health specifities of the community and do not allow the participation of the population in decision-making processes. At this juncture, a review of the work process of family health teams is recommended to provide conditions and so that children can receive comprehensive care.[40–41]

The low score of the Essential Score was similar to some studies[15,18,24,26] and differed from others.[16,30] The General Score, also had scores lower than the cut off or limit, was common in studoes.[15,17–18,24,26,30] The interpretation of these results shows that the presence and extension of PHC attributes in the municipality's FHS are compromised, despite the high FHS coverage. This reveals that the FHS has not been able to function as a gateway to the health system, but rather as a care option, prevailing the curative biomedical model.

There was an association between the child receiving help from the Bolsa Família Program and having access to health services and the diarrhea outcome, and both independent variables were identified as probable protective factors for the occurrence of this health condition. This government program has helped low-income families and allowed them to take better care of their children, and has contributed substantially to reducing child mortality, especially if associated with a multisectoral approach, i.e. when there is income transfer to intervene in important social determinants of health and, at the same time, the provision of effective and sufficient primary health care to meet the health demands of this population.[42–44]

There is evidence that such programs positively impact children's nutritional status and health outcomes given the increased use of preventive services, with consequent promotion of healthy behaviors.[45–46] Regarding Access, one study corroborates the findings and demonstrates the effectiveness of FHS on child health indicators.[5]

Regarding the pneumonia outcome, children who did not use PHC services (unsatisfactory access and use) were more likely to be hospitalized for this diagnosis, but coordination appears as a probable protective factor, which is due to the fact that services can coordinate children using computerized systems. According to studies in the area, coordination seeks to ensure the continuity of health care, recognizing in the health needs that must be met in the Health Care Networks (RAS).[47] This attribute makes it possible to provide information about problems that effect children and also to offer technologies according to the needs; Therefore, it is one of the most important and was well evaluated in the study, which gives it a degree of protection against pneumonia.

Similar results[48] show that hospitalization due to pneumonia in children is associated with the quality of PHC care. In this context, it is clear that child care practices in PHC (nutritional monitoring, immunization, attention to prevalent diseases, prenatal care and family planning, for example) are essential actions to avoid hospitalization due to pneumonia.

The study is limited due to the following issues: data collection based on the caregiver's report about the user's health condition and the occurrence of a strike involving public health officials, which persisted for five months and compromised the functioning of the services at the time where the data should have been collected. Due to the strike, some participants could only be approached when the child was over one year old, despite the data collected only concerned the first year of life. This fact may have contributed to caregivers negatively evaluating health services. In addition, the study was restricted to the urban area, which makes it appropriate to evaluate these programs and services in the municipality as a whole, including in the rural area.

Another limiting issue was the high percentage of caregivers who mentioned other care network services as a reference for child care. This finding seems to further fragment childcare and contribute to poor PHC attributes.

CONCLUSION

Although the municipality has high FHS coverage and this strategy is the preferred scenario for health promotion and disease prevention actions and constitutes a gateway to services, this research study did not identify child care with emphasis on comprehensive care. In addition, the results evidenced a care model whose focus is not on the family, in which the community does not participate and which prioritizes traditional care practices.

As a contribution, support that demonstrates that evaluating comprehensive child health care within the scope of the FHS allows the possibility of strengthening health practices and qualifying the care given to children and their families.

The results show that the care provided to children in PHC results in a higher chance of avoiding hospitalization due to pneumonia, a condition considered sensitive to care in this care model. In addition, complementing family income and the child's accessibility to the health unit were protective factors for episodes of diarrhea. It is concluded that the search to ensure the presence and extension of PHC attributes has the potential to positively modify the health of the child and, therefore, both should be ensured as rights of this population.

REFERENCES

1. Ministério da Saúde (BR). Portaria n. 1.130, de 5 de Agosto de 2015: institui a Política Nacional de Atenção Integral à Saúde da Criança (PNAISC) no âmbito do Sistema Único de Saúde (SUS). 2015 [cited 2018 Apr 17]; Available from: http://bvsms.saude.gov.br/bvs/saudelegis/gm/2015/prt1130_05_08_2015.html
2. Pinto JEP, Aquino R, Medina MG, Silva MGC. Efeito da Estratégia Saúde da Família nas internações por condições sensíveis à atenção primária em menores de um ano na Bahia, Brasil. Cad. Saúde Pública [Internet]. 2018 [cited 2018 Apr 17]; 34(2):1-11. Available from: https://dx.doi.org/10.1590/0102-311x00133816
3. Bastos ML, Menzies D, Hone T, Dehghani K, Trajman A. The impact of the Brazilian family health on selected primary care sensitive conditions: A systematic review. PLoS One [Internet]. 2017 [cited 2018 Apr 17]; 12(8):e0182336. Available from: https://dx.doi.org/10.1371/journal.pone.0182336
4. Ramírez-Tirado L, Rojas LI, Iñiguez RL, Raiher S. Desigualdad en intervenciones de atención primaria para el cuidado de la salud maternoinfantil en México. Rev Panam Salud Publica [Internet]. 2014 [cited 2016 Sept 10]; 35(4):235-41. Available from: https://www.scielosp.org/pdf/rpsp/2014.v35n4/235-241/es
5. Venancio IS, Etsuko T, Rosa DC, Teresa M, Sanches C, Shigeno EY, et al. Effectiveness of family health strategy on child's health indicators in São Paulo State. Rev Bras Saúde Matern Infant [Internet]. 2016 [cited 2016 Oct 15]; 16(3):283-93. Available from: https://dx.doi.org/10.1590/1806-93042016000300004

6. Araujo EMN, Costa GMC, Pedraza DF. Hospitalizations due to primary care-sensitive conditions among children under five years of age: Cross-sectional study. Med J [Internet]. 2017 [cited 2018 Mar 15]; 135(3):270-6. Available from: https://dx.doi.org/10.1590/1516-3180.2016.0344250217

7. Magalhães ALA, Morais OLN. Intra-urban differences in rates of admissions for ambulatory care sensitive conditions in Brazil's Center-West region. Cienc Saude Colet [Internet]. 2017 [cited 2018 Apr 15]; 22(6):2049-62. Available from: https://dx.doi.org/10.1590/1413-81232017226.16632016.

8. Ferrer APS, Grisi SJFE. Assessment of access to primary health care among children and adolescents hospitalized due to avoidable conditions. Rev Assoc Med Bras [Internet]. 2016 [cited 2018 Apr 14]; 62(6):513-22. Available from: https://dx.doi.org/10.1590/1806-9282.62.06.513

9. Botelho JF, Portela MC. Risk of misinterpretation of trends in hospital admissions for primary care sensitive conditions in local contexts: Itaboraí, Rio de Janeiro State, Brazil, 2006-2011. Cad. Saúde Pública [Internet]. 2017 [cited 2018 Apr 15]; 33(3):1-13. Available from: https://dx.doi.org/10.1590/0102-311x00050915.

10. Santos ILF, Gaíva MAM, Abud SM, Benevides FSM. Child hospitalization due to primary care sensitive conditions. Cogitare Enferm [Internet]. 2015 [cited 2016 Sept 15]; 20(1):171-9. Available from: https://dx.doi.org/10.5380/ce.v20i1.37586

11. Toso BRGO, Ross C, Sotti CW, Brisch SV, Cardoso JM. Profile of children hospitalizations by primary care sensitive conditions. Acta Sci Heal Sci. [Internet]. 2016 [cited 2017 May 10]; 38(2):231-8. Available from: https://dx.doi.org/10.4025/actascihealthsci.v38i2.29422.

12. Costa JSD, Pattussi MP, Morimoto T, Arruda JS, Bratkowski GR, Sopelsa M, et al. Tendência das internações por condição sensível à atenção primária e fatores associados em Porto Alegre, RS, Brasil. Cien Saude Colet [Internet]. 2016 [cited 2017 May 10]; 21(4):1289-96. Available from: https://dx.doi.org/10.1590/1413-81232015214.15042015

13. Brasil VP, Costa JSD. Hospitalizations owing to ambulatory care sensitive conditions in Florianopolis, Santa Catarina - an ecological study, 2001-2011. Epidemiol e Serv saude Rev Sist Unico Saude do Bras [Internet]. 2016 [cited 2017 May 10]; 25(1):75-84. Available from: https://dx.doi.org/10.5123/s1679-49742016000100008.

14. Careti CM, Furtado MCC, Barreto JC, Vicente JB, Lima PR. Ações em saúde na atenção básica para redução da mortalidade infantil. Rev Rede Enferm Nord [Internet]. 2016 [cited 2017 May 10]; 7(1):67-75. Available from: https://dx.doi.org/10.15253/2175-6783.2016000100010

15. Braz JC, Mello DF, David YGM, Teixeira AS, Prado AS, Furtado MCC. A longitudinalidade e a integralidade no cuidado às crianças menores de um ano: avaliação de cuidadores. Med (Ribeirão Preto) [Internet]. 2013 [cited 2016 Sept 22]; 46(4):416-23. Available from: https://dx.doi.org/10.11606/issn.2176-7262.v46i4p416-423.

16. Furtado MCC, Braz JC, Pina JC, Mello DF, Lima RAG. Assessing the care of children under one year old in primary health care. Rev Lat Am Enfermagem [Internet]. 2013 [cited 2016 Sept 22]; 21(2):554-61. Available from: https://dx.doi.org/10.1590/S0104-11692013000200012

17. Marques AS, Freitas DA, Leão CDA, Oliveira SKM, Pereira MM, Caldeira AP. Atenção Primária e saúde materno-infantil: a percepção de cuidadores em uma comunidade rural quilombola. Cienc Saude Colet [Internet]. 2014 [cited 2016 Sept 22]; 19(2):365-71. Available from: https://dx.doi.org/10.1590/1413-81232014192.02992013

18. Silva SA, Baitelo TC, Fracolli LA. Primary health care evaluation: The view of clients and professionals about the family health strategy. Rev Latino-Am Enfermagem [Internet]. 2015 [cited 2016 Sept 21]; 23(5):979-87. Available from: https://dx.doi.org/10.1590/0104-1169.0489.2639

19. Costa LQ, Pinto EP, Silva MGC, Costa LQ, Pinto EP, Silva MGC. Time trends in hospitalizations for ambulatory care sensitive conditions among children under five years old in Ceará, Brazil, 2000-2012. Epidemiol e Serviços Saúde [Internet]. 2017 [cited 2018 Apr 18]; 26(1):51-60. Available from: https://dx.doi.org/10.5123/s1679-49742017000100006

20. Donabedian A. La calidad de la atención médica: definición y métodos de evaluación. México, D.F.(MX): Ediciones Científicas La prensa Médica Mexicana; 1984.

21. Ministério da Saúde (BR). Sage: Sala de apoio à gestão estratégica. Brasília(BR): Ministério da Saúde, 2013 [cited 2013 Oct 1]. Disponível em: http://sage.saude.gov.br/index.php/pagina/

22. Brasil. Departamento da Atenção Básica, Secretaria de Atenção em Saúde. Manual do Instrumento de Avaliação da Atenção Primária à saúde: Primary Care Assessment Tool PCA Tool [Internet]. 2010. [cited 2016 Oct 17]. Available from: http://bvsms.saude.gov.br/bvs/publicacoes/manual_avaliacao_pcatool_brasil.pdf

23. Hair JR. Análise Multivariada de dados. 6th ed Porto Alegre(BR): Bookman; 2009.

24. Mesquita FM, Luz BSR, Araújo CS. A atenção primária à saúde e seus atributos: a situação das crianças menores de dois anos segundo suas cuidadoras. Cien Saude Colet [Internet]. 2014 [cited 2016 Sept 18];19(7):2033-46. Available from: http://dx.doi.org/10.1590/1413-81232014197.17322013

25. Oliveira VBCA, Veríssimo M. Children's health care assistance according to their families: a comparison between models of primary care. Rev da Esc Enferm da USP [Internet]. 2015 [cited 2016 Sept 19]; 49(1):30-6. Available from: http://dx.doi.org/10.1590/S0080-623420150000100004

26. Silva AS, Fracolli LA. Evaluating child care in the family health strategy. Rev Bras Enferm [Internet]. 2016 [cited 2017 May 17]; 69(1):54-61. Available from: https://dx.doi.org/10.1590/0034-7167.2016690107i

27. Buboltz FL, Silveira A, Neves ET. Strategies for families of children served in pediatric first aid: The search for the construction of integrality. Texto Contexto Enferm [Internet]. 2015 [cited 2018 Apr 29]; 24(4):1027-34. Available from: https://dx.doi.org/10.1590/0104-0707201500002040014

28. Berra S, Rodríguez-Sanz M, Rajmil L, Pasarín MI, Borrell C. Experiences with primary care associated to health, socio-demographics and use of services in children and adolescentes. Cad Saúde Pública [Internet]. 2014 [cited 2016 Oct 10]; 30(12):2607-18. Available from: https://dx.doi.org/10.1590/0102-311X00001014

29. Oliveira MAC, Pereira IC. Atributos essenciais da atenção primária e a estratégia saúde da família. Rev Bras Enferm [Internet]. 2013 [cited 2016 Oct 10]; 66(spe):158-64. Available from: https://dx.doi.org/10.1590/S0034-71672013000700020.

30. Santos NCCB, Vaz EMC, Almeida JN, Oliveira BRG, Collet N, Reichert APS. Presença e extensão dos atributos da Atenção Primária à Saúde da criança em distintos modelos de cuidado. Cad Saúde Pública [Internet]. 2018 [cited 2018 Sept 25]; 34(1):e00014216. Available from: https://dx.doi.org/10.1590/0102-311x00014216

31. Zickafoose JS, Decamp LR, Prosser LA. Association between enhanced access services in pediatric primary care and utilization of emergency departments: A national parent survey. J Pediatr [Internet]. 2013 [cited 2016 Oct 10]; 163(5):1389-95. Available from: https://dx.doi.org/10.1016/j.jpeds.2013.04.050

32. Wilson C, Hogg R, Henderson M, Wilson P. Patterns of primary care service use by families with young children. Fam Pract [Internet]. 2013 [cited 2016 Oct 10]; 30(6):679-94. Available from: https://dx.doi.org/10.1093/fampra/cmt057

33. Frank BRB, Viera CS, Ross C, Obregón PL, Toso BRGO. Avaliação da longitudinalidade em unidades de Atenção Primária à Saúde. Saúde em Debate [Internet]. 2015 [cited 2016 Oct 09]; 39(105):400-10. Available from: https://dx.doi.org/10.1590/0103-110420151050002008

34. Vaz EMC, Magalhães RKBD, Toso BRGO, Reichert APS, Collet N. Longitudinality in childcare provided through Family Health Strategy. Rev Gaúcha Enferm. [Internet]. 2015 [cited 2018 Sept 25]; 36(4):49-54. Available from: https://dx.doi.org/10.1590/1983-1447.2015.04.51862

35. Zuckerman KE, Perrin JM, Hobrecker K, Donelan K. Barriers to specialty care and specialty referral completion in the community health center setting. J Pediatr [Internet]. 2013 [cited 2016 Oct 09]; 162(2):409-14. Available from: http://dx.doi.org/10.1016/j.jpeds.2012.07.022

36. Rodrigues LBB, Silva PCS, Peruhype RC, Palha PF, Popolin MP, Crispim J de A, et al. A atenção primária à saúde na coordenação das redes de atenção: uma revisão integrativa. Cien Saude Colet [Internet]. 2014 [cited 2016 Sept 10]; 19(2):343-52. Available from: https://dx.doi.org/10.1590/1413-81232014192.18032012

37. Fertonani HP, Pires DEP, Biff D, Scherer MDA. The health care model: concepts and challenges for primary health care in Brazil. Cien Saude Colet [Internet]. 2015 [cited 2016 Sept 10]; 20(6):1869-78. Available from: https://dx.doi.org/10.1590/1413-81232015206.13272014

38. Furtado MCC, Mello DF, Pina JC, Vicente JB, Lima PR, Rezende VD. Nurses' actions and articulations in child care in primary health care. Texto Contexto Enferm [Internet]. 2018 [cited 2018 June 13]; 27(1):e0930016. Available from: https://dx.doi.org/10.1590/0104-07072018000930016

39. Araujo JP, Vieira CS, Toso BRGO, Collet N, Nassar PO. Assessment of atributes for family and community guidance in the child health. Acta Paul Enferm [Internet]. 2014 [cited 2016 Sept 10]; 27(5):440-6. Available from: https://dx.doi.org/10.1590/1982-0194201400073

40. Santos NCCB, Toso BRGO, Collet N, Reichert APS. Family-centeredness and community orientation according to three child health care models. Acta Paul Enferm [Internet]. 2016 [cited 2018 Sept 25]; 29(6):610-7. Available from: https://dx.doi. org/10.1590/1982-0194201600086

41. Reichert APS, Almeida LAB, Toso BRGO, Santos NCCB, Vaz EMC, Collet N. Family and community orientation in children's primary healthcare. Ciênc Saúde Coletiva [Internet]. 2016 [cited 2018 Sept 25]; 21(1):119-27. Available from: https://dx.doi.org/10.1590/1413-81232015211.05682014.

42. Guanais FC. Efectos combinados de la ampliación de la atención primaria de salud y de las transferencias condicionadas de dinero en efectivo sobre la mortalidad infantil en Brasil, 1998-2010. Am J Public Health [Internet]. 2015 [cited 2018 Apr 29]; 105(11):585-99. Available from: https://dx.doi.org/10.2105/AJPH.2013.301452s

43. Shei A. Brazil's conditional cash transfer program associated with declines in infant mortality rates. Health Aff [Internet]. 2013 [cited 2018 Apr 29]; 32(7):1274-81. Available from: https://www.healthaffairs.org/doi/full/10.1377/hlthaff.2012.0827

44. Rasella D, Aquino R, Santos CAT, Paes-Sousa R, Barreto ML. Effect of a conditional cash transfer programme on childhood mortality: a Nationwide analysis of Brazilian municipalities. Lancet [Internet]. 2013 [cited 2018 Sep 28]; 382(9886):57-64. Available from: https://dx.doi.org/10.1016/S0140-6736(13)60715-1

45. Sperandio N, Rodrigues CT, Franceschini SCC, Priore SE. The impact of the Bolsa Família Program on food consumption: a comparative study of the southeast and northeast regions of Brazil. Cien Saude Colet [Internet]. 2017 [cited 2018 Apr 29]; 22(6):1771-80. Available from: https://dx.doi.org/10.1590/1413-81232017226.25852016

46. Coelho PL, Melo ASSA. The impact of the “Bolsa Família” Program on household diet quality, Pernambuco State, Brazil. Cien Saude Colet [Internet]. 2017 [cited 2018 Apr 29]; 22(2):393-402. Disponível em: https://dx.doi.org/10.1590/1413-81232017222.13622015

47. Silva RMM, Silva Sobrinho, RA, Neves ET, Toso BRGO, Viera CS. Challenges in the coordination of children´s healthcare. Cien Saude Colet [Internet]. 2015 [cited 2018 Oct 02]; 20(4):1217-24. Available from: https://dx.doi.org/10.1590/14138123201 5204.00742014

48. Pina JC, Moraes SA, Freitas ICM, Mello DF. Role of Primary Health Care in child hospitalization due to pneumonia: a case-control study. Rev Latino-am Enfermagem [Internet]. 2017 [cited 2018 Apr 29]; 25:e2892. Available from: https://dx.doi.org/10.1590/1518-8345.1731.2892

NOTES

ORIGIN OF THE ARTICLE

Article extracted from the Thesis - Assessment of child health care in the context of the Family Health Strategy, in a city in the state of Ceará, presented to the *Programa de Pós-Graduação Enfermagem em Saúde Pública da Escola de Enfermagem de Ribeirão Preto da Universidade de São Paulo*, in 2016.

CONTRIBUTION OF AUTHORITY

Study design: Macedo JCB, Furtado MCC.
Data collection: Macedo JCB.
Analysis and interpretation of the data: Macedo JCB, Arcencio RA, Ramos ACV, Furtado MCC.
Discussion of results: Macedo JCB, Arcencio RA, Wolkers PCB, Furtado MCC.
Writing and / or critical review of content: Macedo JCB, Arcencio RA, Wolkers PCB, APC Toninato, Furtado MCC.
Revision and final approval of the final version: Macedo JCB, APC Toninato, Furtado MCC.

ETHICS COMMITTEE IN RESEARCH

Approved by the Research Ethics Committee of the University of São Paulo at Ribeirão Preto College of Nursing, under opinion No. 671.008 / 2014, and CAAE No. 27285914.1.0000.5393

CONFLICT OF INTEREST

No any conflict of interest.

HISTORICAL

Received: June 20, 2018.
Approved: November 13, 2018.

CORRESPONDENCE AUTHOR

Janaina Carvalho Braz Macedo
janacbraz@hotmail.com