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ORIGINAL ARTICLE

MONITORING THE NUTRITIONAL AND HEALTH STATUS OF CHILDREN WHO ATTEND A COMMUNITY NURSERY

ACOMPANHAMENTO DO ESTADO NUTRICIONAL E DE SAÚDE DE CRIANÇAS QUE FREQUENTAM UMA CRECHE COMUNITÁRIA

MONITOREO DEL ESTADO NUTRICIONAL Y DE LA SALUD DE LOS NIÑOS QUE ASISTEN A UNA GUARDERÍA DE LA COMUNIDAD

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ABSTRACT

Objective: evaluating the evolution of growth and the health status of children who attend a community nursery. **Method:** a longitudinal study conducted in 2011 and 2012 with 46 children of 3-4 years old residing in a community of Rio de Janeiro/RJ. Statistical analysis was performed using Epi Info 3.52 software; data were presented in tables and discussed in the literature. The project was approved by the Research Ethics Committee, Protocol 027/2011. **Results:** the prevalence of underweight children passed from 13% to 8,7% and the overweight rate or obesity increased from 13,1% to 21,7%. During the period studied there were also observed diseases of respiratory, dental and dermatological type. **Conclusion:** the main problem was overweight, besides the common complications in childhood. It is emphasized the importance of health professionals acting in nurseries through actions turned to promotion of growth and healthy living habits. **Descriptors:** Child Health; Nutritional Status; Public Health; Nursing.

RESUMO

Objetivo: avaliar a evolução do crescimento e a situação de saúde de crianças que frequentam uma creche comunitária. **Método:** estudo longitudinal realizado no período de 2011 a 2012 com 46 crianças de 3 a 4 anos residentes em uma comunidade do município do Rio de Janeiro/RJ. A análise estatística foi realizada no software Epi Info 3.52, os dados foram apresentados em tabelas e discutidos com a literatura. O projeto foi aprovado no Comitê de Ética em Pesquisa, Protocolo 027/2011. **Resultados:** a prevalência de crianças com baixo peso passou de 13% para 8,7% e a taxa sobrepeso ou obesidade passou de 13,1% para 21,7%. Durante o período estudado também foram observados agravos do tipo respiratório, odontológico e dermatológico. **Conclusão:** o principal problema foi o excesso de peso, além das intercorrências comuns na infância. Ressalta-se a importância da atuação de profissionais de saúde nas creches mediante ações voltadas para a promoção do crescimento e hábitos saudáveis de vida. **Descritores:** Saúde da Criança; Estado Nutricional; Saúde Pública; Enfermagem.

RESUMEN

Objetivo: evaluar la evolución del crecimiento y el estado de salud de los niños que asisten a una guardería de la comunidad. **Método:** es un estudio longitudinal realizado en 2011 y 2012 con 46 niños de 3-4 años residentes en una comunidad de Río de Janeiro/RJ. El análisis estadístico se realizó utilizando el software Epi Info 3.52; los datos se presentaron en tablas y discutidos en la literatura. El proyecto fue aprobado por el Comité de Ética en la Investigación, Protocolo 027/2011. **Resultados:** la prevalencia de niños con bajo peso pasado del 13% al 8,7% y la tasa de sobrepeso u obesidad aumentó de 13,1% a 21,7%. Durante el periodo del estudio también se observaron las enfermedades respiratorias, dentales y dermatológicas. **Conclusión:** el problema principal era el sobrepeso, además de las complicaciones frecuentes en la infancia. Hacemos hincapié en la importancia de los profesionales sanitarios que actúan en la guardería a través de acciones destinadas a promover el crecimiento y los hábitos de vida saludables. **Descriptores:** Salud Infantil; El Estado Nutricional; Salud Pública; Enfermería.

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INTRODUCTION

The monitoring of the health and nutrition of children under five years old is a measure of fundamental importance for the identification of risk situations, social inequalities in health, nutritional disorders and is a basis for the planning of actions to promoting health and prevention of diseases, with a view to ensuring a healthy adulthood.¹⁻³

One of the strategies that enable continuous monitoring of child growth standards is the anthropometric measurements, low-cost action, characterized mainly by measuring weight and height of children seen by health professionals in primary care services.¹⁻⁴

Most of the problems of health and nutrition that occurs during childhood are related to inadequate food intake and recurrent infections. It is known that the frequency of appearance of morbidity may be increased among children attending nurseries and schools, due to the fact that in these environments healthy and sick children stay together for a long period of time.⁴⁻⁷

In this sense, increasingly it is necessary to the performance of health professionals in communities, schools and nurseries, develop actions to reduce the prevalence of diseases such as overweight, obesity, infections and prevention of chronic diseases related to poor feeding.^{2,7-9}

From the knowledge of environmental factors, socioeconomic conditions, health indicators and the social context in which the child lives, the health professional has the ability to plan preventive actions that are effective in determining healthy habits and improving the quality of life of this age group.⁹

Given the above, the objective of this study was:

- Evaluating the growth and the health status of children attending a community nursery.

METHOD

This is a longitudinal study of a descriptive nature that took place at a community nursery located in a Community of the south zone of Rio de Janeiro. This nursery works full-time basis and receives an average of 110 children aged four months to four years old, 40 children aged less than two years old and 70 aged three to four years old. For the definition of the sample it was used as inclusion criteria: children aged three to four years with active registration in the

Educational Center in 2011 and the acceptance of parents or guardians to participate in the study. Children who were separated from the nursery at the time of anthropometric assessments and health conditions were excluded. Thus, the sample consisted of 46 children.

The instrument of data collection consisted of a questionnaire containing information on birth weight, duration of breastfeeding, presence of morbidity in children, weight and height record, nutritional status and socioeconomic and demographic characteristics of the child's family. Data collection occurred during the period from April 2011 to April 2012.

The parents or guardians of the children were informed about the purpose of the study and asked to sign the Informed Consent and, after acceptance to participate in this research there was later conducted an interview with them, to obtain the information on the socioeconomic characteristics and background of the child health situation. The evaluation of the health status of the children was held at the nursery ward, through technical simplified physical examination and measurement of weight and height during the two years of the study.

For the anthropometric measurements we used a digital scale, which allowed the weight of observation in kilograms (kg), one Toesa ruler and a tape measure. For analysis of the nutritional status it was considered the calculus by anthropometric measurements, according to the weight z-score values for height, being considered: low weight: value < -1,0; Normal: value from -1,0 to 1,0, overweight: value from 1 to 2, and obesity, the value > 2,1.

After identifying the health situation of children who attend the institution, have been discussed with the direction of the nursery the forms of assistance directed to employees and / or family in order to promoting and maintaining the health of children, and on the prevention of diseases.

Data were processed using Epi-Info version 3,52 and there were performed univariate and bivariate analyzes. The Pearson's chi-square test was calculated to assess the differences between the proportions, considering the significance level of 5% ($p < 0,05$).

This research followed the Resolution 466/12 dealing with bioethics standards in work with humans and was approved by opinion number 027/2011 given by the Research Ethics Committee of Anna Nery Nursing School.

RESULTS AND DISCUSSION

Table 1 shows data referring to the social, economic and demographic characteristics of

the families of children attending the community nursery studied.

Table 1. Socioeconomic and demographic characteristics of the families of children who attend a community nursery, Rio de Janeiro, 2011-2012. (n= 46)

Variables	n	%
Age of the mother (in years)		
20 - 25	18	39,1
26 - 31	15	32,6
32 - 37	06	13,0
38 or older	07	15,2
Educational level of the Mother		
Until full basic	27	58,7
High school	16	34,7
Higher education	03	6,5
Mother works		
Yes	39	84,8
No	07	15,2
Age of the father (in years)		
20 - 25	12	26,1
26 - 31	15	32,6
32 - 37	06	13,0
38 or older	12	26,1
Non informed	01	2,2
Educational level of the Father		
Until full basic	29	63,0
High school	14	30,4
Higher education	02	4,4
Non informed	01	2,2
Father works		
Yes	36	78,3
No	09	19,5
Non informed	01	2,2
Marital Status		
Married/Living together	28	60,9
Separated/Divorced	10	21,7
Single	08	17,4
Net per capita income		
Until 500	09	19,5
From 501 to 1500	32	69,6
From 1501 to 2500	04	8,7
Over 3500	01	2,2
Number of rooms in the house		
From 2 to 3	15	32,6
From 4 to 5	27	58,7
6 or more	04	8,7
Number of persons residing in the house		
Until 2	03	6,5
3 to 4	32	69,6
5 or more	11	23,9

The results presented in Table 1 show that more than half of the mothers and fathers of children have low education and are aged between 20 and 31, which characterizes them as young adults. Parents, for the most part, are married or live with a partner (60,9%) have some work activity (78,3% of fathers and 84,8% of mothers) and 89,1% have an income of up to R\$ 1500.00, which corresponds to approximately twice the minimum wage. It was also found that 58,7% of children living in houses with 4 to 5 rooms and 69,6% of the families are composed of 3 to 4 people.

These results corroborate with the studies about health problems in the mother-child health, which has demonstrated the association between health-disease process,

quality housing, nutrition, income, education, access to health services among others. These studies reveal that the availability of food, housing quality and access to essential services like sanitation and health care, are related to the increased purchasing power of households, with the progression of maternal education and consequently the decline of rates of child malnutrition.^{3-7, 9-10}

Table 2 refers to the health characteristics, such as birth weight and total breastfeeding period.

Table 2. Evaluation of health characteristics of children who attend a community nursery, Rio de Janeiro, 2011-2012. (n=46)

Health Characteristics	n	%
Birth weight (in grams)	04	8,7
< 2500	36	78,3
2500 to 4000		
> 4000	03	6,5
Without information	03	6,5
Total time of breastfeeding (in months)		
Never	01	2,2
< 6 months	11	24,0
6 months	08	17,4
> than 6 months	26	56,4

Observing Table 2 it appears that the vast majority of children (78,3%) were born with normal weight and 8,7% of the children are classified as low birth weight.

The birth weight affects the child's health status and is an important risk factor on infant survival. Children with low birth weight, ie less than 2.500 grams at increased risk in relation to morbidity and mortality in the first year of life and require systematic monitoring of health professionals, especially in the first years of life. The presence of this risk factors may represent losses in linear growth, weight and mental and motor development, child.^{2,11}

Regarding the duration of breastfeeding, we considered the total period in which mothers' breast milk is offered to the child. The data in Table 2 indicate that 26% of children received breast milk for less than 6 months and 17,4% were weaned at six months, although the Ministry of Health³ should advocate that breastfeeding is exclusive in the first six months of life.

Ministry of Health data show that breastfeeding is essential for good health of mother and child. Among the main advantages for the baby, is included to reduce the appearance of allergic problems, respiratory and some diseases that may subsequently arise as obesity, hypertension, diabetes and

dyslipidemia.²⁻³ In addition to being an excellent exercise that contributes to the development speech, assisting in the teeth and breathing quality, the practice of breastfeeding also offers advantages for mothers as: reducing the risk of breast cancer, ovarian cancer, reducing the risk of developing diabetes, among other.¹³

Considering the data of this study, it appears that the vast majority of children had birth weight appropriate and received breast milk for six months or more, which implies good health for their growth and development early in life.

Table 3 compares the health conditions was shown by the children performed in two stages, through physical examination and anthropometric measurements carried out in April 2011 and April 2012.

Table 3. Comparison of the health conditions of children who attend a community nursery, Rio de Janeiro, 2011-2012. (n=46)

Variables	April/2011		April/2012		p
	n	%	N	%	
Health Problems					
Yes	25	54,3	21	45,7	0,40
No	21	45,7	25	54,3	
Type of Health Problems					
Tooth decay	05	20,0	02	9,5	-
Dermatological	02	8,0	02	9,5	
Pediculosis	07	28,0	02	9,5	
Respiratory	09	36,0	14	66,7	
Other	02	8,0	01	4,7	
Nutritional Status					
Low weight	06	13,0	04	8,7	0,48
Normal	34	73,9	32	69,6	
Over weight	05	10,9	06	13,0	
Obesity	01	2,2	04	8,7	

Observing Table 3 it appears that in 2011 and 2012, about half of the children examined had some type of health problem, 53,4% and 45,7%, respectively. Among the problems found: tooth decay, skin diseases, lice, acute respiratory infections, among other complications typical of the age group of children less than five years old, especially those who live daily with other children in settings such as nursery or school.⁴⁻⁷

With regard to nutritional status, there was a decrease in the number of underweight children from 13,0% in 2011 to 8,7% in 2012 and a considerable increase in overweight and obesity rate, from 13,1% in 2011 to 21,7% in 2012, although the difference between the proportions of nutritional disorders, observed in the two years of the study, was not statistically significant ($p>0,05$).

The rise in childhood obesity rate and the decrease in malnutrition rates have also been observed in other studies. Studies conducted in Brazil in relation to childhood obesity estimate that three million children under the age of 10 years old are overweight. Among these, 95% are related to poor nutrition, while only 5% would be due to endogenous factors.¹⁴⁻⁶ It is noteworthy that this increase in childhood obesity has been observed in children belonging to low social level classes and not only among middle and upper class children.¹⁶

Currently, Brazilian society is in a nutritional transition, which means that in addition to malnutrition and hunger, Brazil begins to experience problems related to obesity. This is due to changes in eating patterns of individuals due to influence of the media and socioeconomic changes. Thus, it can be considered obesity as a public health problem as remarkable as malnutrition, demonstrating thus the need for a preventive approach that should be initiated in childhood.^{3,17}

Tracking the growth is in a simple, low cost and anthropometry is considered unique instrument with regard to the assessment of the child's health status. In the environment of early childhood institutions assess the growth and development of these children should be part of the nursing actions, allowing the nurse to establish an appropriate plan of care to meet the same needs.^{4,7,9,16}

Children aged 1-4 years old are considered as a group that requires special attention due to increased vulnerability to diseases frequently (respiratory infections and diarrhea). Thus it is important that health professionals involved in nursery environment/educational centers, develop

educational group activities with the families of the same, in order to address the prevention and control of diarrheal diseases and acute respiratory infections, as well as training with the staff of nursery schools (teachers/instructors) for prevention and control of these diseases.^{5,19-20}

Given the results presented, we can emphasize how the actions of professional nursing network of primary health care can work together in nurseries, as the early detection of nutritional disorders, and conducting health education to parents of children that many times are embedded in contexts that include ineffective breastfeeding, maternal perception changed on the nutritional status of their children and low social status that may favor the increased rates of nutritional disorders.^{16,19-20}

CONCLUSION

After a year of monitoring children who attend community nursery, there was the presence of common complications in childhood and a change in anthropometric profile, characterized by a decrease in malnutrition rates and an increase in overweight and obesity rates.

The fact that the research had been carried out in a public nursery may have resulted in the high prevalence of health problems observed among children, especially in regard to respiratory problems. Another aspect to consider is that although the results of this study express the specific reality of a portion of children attending a day care center, the results are consistent with the epidemiological profile of the country indicators that point the impact of nutritional transition evidenced by reduced malnutrition rates and rapid growth of overweight and obesity rates.

The results raise the need for strategies to be implemented in order to promote better health and child nutrition. Among the activities that can be performed in these educational settings, the implementation of educational work is suggested as courses and lectures, with a view to continuing education with the teachers and staff, meetings with those responsible for children to be themes for the care of child health, healthy food, among others. In addition to the group guidelines, contact with parents or educators can occur on an individual basis, according to the need of health by each child.

In this context it emphasizes the importance of health professionals acting in nursery through follow-up actions, aimed at promoting growth and healthy living habits.

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