



MONITORING CHILDREN'S HEALTH IN A PUBLIC DAYCARE CENTER: FOCUS ON THEIR NUTRITIONAL PROFILE

VIGILÂNCIA À SAÚDE DAS CRIANÇAS EM CRECHE MUNICIPAL: ENFOQUE NO PERFIL NUTRICIONAL

VIGILANCIA A LA SALUD DE NIÑOS EN JARDÍN INFANTIL: ENFOQUE EN PERFIL NUTRICIONAL

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One aimed to identify the nutritional profile of children in a public daycare center in the city of Cuité-Paraíba, from the perspective of health surveillance. This is a cross-sectional, exploratory-descriptive, field study with a quantitative approach, performed in 2011, with 55 children from 6 to 60 months of life, assisted full time in a public daycare center, who met the selection criteria: be attending the daycare center; and not present any disability. One used for evaluation the anthropometric measurements of weight, height and Body Mass Index, according to the growth curve suggested by the Ministry of Health. One identified that 96.4% had adequate nutritional status, however, 7.3% had overweight risk and 3.6% underweight risk, especially girls. It is important to raise managers', professionals' and parents' awareness about the health surveillance of children in daycare centers for identification and intervention against nutritional changes, encouraging an adequate child growth.

Descriptors: Child Health; Child Day Care Centers; Nutritional Status.

Objetivou-se identificar o perfil nutricional de crianças de uma creche municipal na cidade de Cuité-Paraíba, sob a ótica da vigilância à saúde. Pesquisa transversal, exploratória-descritiva, de campo, com abordagem quantitativa, realizada em 2011, com 55 crianças de 6 a 60 meses de vida, assistidas em tempo integral em uma creche municipal, que atenderam aos critérios de seleção: estar frequentando a creche; e não apresentar deficiência. Utilizou-se para avaliação às medidas antropométricas de peso, estatura e Índice de Massa Corporal, conforme a curva de crescimento preconizada pelo Ministério da Saúde. Identificou-se que 96,4% apresentaram estado nutricional adequado, porém, 7,3% risco para sobrepeso e 3,6% magreza, especialmente as meninas. É imperativa a sensibilização de gestores, profissionais e pais quanto à vigilância à saúde de crianças em creches, para identificação e intervenção frente a alterações nutricionais, favorecendo um crescimento infantil adequado.

Descritores: Saúde da Criança; Creches; Estado Nutricional.

El objetivo fue identificar el estado nutricional de niños en jardín infantil de Cuite-Paraíba, Brasil, bajo el punto de vista de la vigilancia a la salud. Investigación transversal, exploratoria, descriptiva y cuantitativa, llevada a cabo en octubre y noviembre de 2011, con 55 niños de 6 a 60 meses de vida, que cumplieron los criterios de selección: atendidas en tiempo integral en jardín infantil, no presentar discapacidad. Se utilizó para evaluar las mediciones antropométricas de peso, talla e índice de masa corporal, como la curva de crecimiento recomendada por el Ministerio de Salud del Brasil. Se identificó que 96,4% tenían estado nutricional adecuado, sin embargo, 7,3% para riesgo, 3,6% sobrepeso y delgadez, especialmente en las niñas. Es imperativo crear conciencia de gestores, profesionales y padres acerca de la vigilancia a la salud de niños para identificación e intervención delante de las alteraciones nutricionales, favoreciendo el crecimiento infantil adecuada.

Descritores: Salud del Niño; Jardines Infantiles; Estado Nutricional.

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INTRODUCTION

One understands as health surveillance a new model of health care, deployed with the Unified Health System (SUS), for which the service needs to take an active stance, focusing on risk prevention and health promotion for people and population groups at highest risk, among them, the children under five⁽¹⁻²⁾.

The child, seen as a being in constant growth and development is a priority group in the attention to the population's health in line with the guidelines of the Agenda of Commitments to Comprehensive Child Health and Infant Mortality Reduction. Thus, public policies should be directed to the adoption of comprehensive care that enhances the quality of life of this population and allows the facing of infant morbidity and mortality⁽¹⁾.

The comprehensive care represents an essential tool in health surveillance in pediatrics⁽²⁾, by addressing all the areas of child care. Therefore, for this action to be successful, the child must be assisted in their various stages of growth and development, approaching the surveillance of nutritional status, guidelines concerning immunization, hygiene, prevention of accidents and main damages to health⁽³⁾.

Within this guideline of children's health surveillance, the monitoring of their nutritional status is a key tool for measuring the health and development of the population's quality of life in general, considering the growth as an indicator of levels of child health, as it reflects the conditions of life and access to determinant factors and constraints of a population's health⁽⁴⁻⁵⁾.

In this context, one elected the daycare center for the development of this research because it is a scenario that offers adequate conditions of child growth and development according to the World Health Organization (WHO)⁽⁶⁾ and, therefore, for representing an important space for performing the surveillance of nutritional status and for enabling the identification of possible nutritional disorders, monitoring of social inequalities, and also for allowing the implementation of actions in

nutrition and health.

It is noteworthy that daycare centers represent a strategy of developing countries to improve the growth of children who belong to the less disadvantaged social strata, besides allowing mothers to reconcile employment with child care. In Brazil, 10 to 15% of preschool children attend daycare centers in large and medium cities⁽⁷⁾.

In this sense one emphasizes that the nurse has an important role in the daycare center, for performing the growth tracking and development of children under five years old from important data obtained about their health, such as food by age group, hygiene, supplementation of vitamins and iron, immunization status and nutritional status, as a basis for the promotion of educational activities to arouse the interest of the child's family and professional child care for disease prevention and healthy habits⁽⁸⁾.

Considering the model of surveillance to children's health, highlighting the nutritional status and factors that harm the process of the children's growth, the goal of this study is to identify the nutritional status of children in a public daycare center in the city of Cuité-Paraíba, under the perspective of health surveillance.

METHODS

This was a cross-sectional research of exploratory type, descriptive and field study with a quantitative approach, performed in a public daycare center in the city of Cuité - Paraíba, attending full-time, children between 6-60 months of age, considered low-income ones, whose mothers perform work activities outside their homes.

The population consisted of 75 children of both sexes, who attended the daycare center mentioned above, and met the inclusion criteria: age between 6 and 60 months old and be attending the daycare center; present no motor or postural dysfunction that could

interfere in the results of the evaluation. Thus, the sample was delimited to 55 children, 20 did not go to the day center in the data collection days, being considered lost.

Nurse students conducted the data collection on the premises of the daycare center, in the months of October and November 2011, appropriately trained by the research coordinator. A questionnaire was used containing information about the children (age and gender) and their parents (age, gender, education and occupation of parents). Then one conducted the evaluation of the child according to the anthropometric measurements (weight, length/height) and nutritional status classification through the interpretation of the body mass index (BMI) for age, as the ratio between body mass and height squared.

Anthropometry comprises a science, based on methodical and quantitative measurement of the dimensional variations of the human body, widely applied in the assessment of the nutritional status of individuals and communities, for being a low-cost and highly objective and sensitive method for early detection of nutritional changes⁽⁴⁾.

In this sense, the anthropometric evaluation was performed by measuring the weight and length/height, using a platform digital scale with capacity of 150kg and graduation of 100g, inelastic measuring tape fixed to the wall with no baseboard, wooden horizontal anthropometer with amplitude wood and subdivisions of 0.1cm, whose measurements were expressed in kilograms and centimeters, respectively. For this analysis one followed the patterns of the growth curves established by the WHO in 2006⁽⁹⁾, based on the parameters of the cutoff points, represented by the Z score as the median, classifying the children according to their weight and length/height in: high ($>+2$ Z), adequate (≥ -2 and $+2 \leq$ Z), low (≥ -3 and <-2 Z) and very low (<-3 Z), and the BMI in: obesity ($> +3$ Z), overweight ($\geq +2$ and $+3 \leq$ Z), risk of overweight ($+2 \leq$ and $> +1$ Z), appropriate ($\leq +1$ and > -2 Z), underweight

(<-2 and ≥ -3 Z) and severe thinness (<-3 Z).

The data were analyzed descriptively through absolute (N) and relative (%) frequencies. For categorical and continuous variables one used the average, standard deviation, median, maximum and minimum values. For data analysis, one used the SAS software version 9.1.3 (SAS Institute Inc., Cary, NC, USA, 2002-2003). Then the data were presented in tables describing the children's profile.

Following the Resolution No. 196/96 from the Ministry of Health, this study was submitted to the Ethics Committee in Research of the Center for Higher Education and Development (CEP/CESED), having received the assent protocol CAAE: 0089.0.405.000-11.

RESULTS

Table 1, which shows the sociodemographic profile of the children's mothers from the daycare center mentioned according to the age, number of children and those under five years old, stands out among the findings that out of the total of mothers only 4 (7.3%) are younger than 20 years old, and three of them already have three children, being all of them under five years old, and among the ones over 20 years old, the predominant age was 24 years old (16.4%), with an average of 5 children, being three of them under five years old. In this context, a relevant piece of information is the paternal absence in the household, as evidenced by reports of 23 mothers who reported taking care of their children alone.

Given the evaluation of the number of people living in the household also presented in Table 1, there was an average of 5 people per household, including all types of relationships, reaching up to 10 individuals among the residents, being the number of children under five years old higher in 12.7% of households with 3 children, followed by 38.2% with two and 49.1% had at least one child.

In the descriptive analysis of the characteristics of the mothers of children in the public daycare center: if

they attended school, the level of education and occupation are shown in Table 2. According to this table, one can verify that all the 55 participants who signed the informed consent form, are mothers, highlighting the maternal presence in the school activities of their children. Regarding the level of education and profession, it can be noted that although only 5.5% are illiterate, the majority (67.3%) showed a low level of education, as they did not finish elementary school. In a direct proportion to this fact the large majority claimed to be farmers.

Table 3 shows the profile of the children enrolled in the daycare center and their distribution by gender,

age group and age when they were registered at the institution, 55 children were studied, being the highlight for male ones (47.3%) and the age group less than two years old having the smallest number of children (20%).

Table 4 presents the anthropometric measures of public daycare centers considering the current classification parameters established by the WHO, with score Z meaning how many standard deviations the data is away from the reference median, showing that the majority is eutrophic, being only 7.3% of the sample at risk for overweight.

Table 1 - Demographic profile of the children's mothers of the public daycare center. Cuité, PB, Brazil, in 2011.

Variables	n = 55				
	Average	Standard Deviation	Median	Minimum	Maximum
Mother's age	26.9	7.4	24	19	50
Number of children	2.9	1.3	3	1	7
Number of children < 5 years old /household	1.6	0.7	2	1	3
Number of people at home	4.8	1.7	5	2	10

Table 2 - Descriptive analysis of the characteristics of the mothers of children from the public daycare center. Cuité, PB, Brazil, in 2011.

Variables	n = 55	
	n	%
Mother attended school		
Yes	53	96.4
No	2	3.6
Mother's educational level		
Illiterate	3	5.5
Incomplete Elementary School	37	67.3
Complete Elementary School	4	7.3
Incomplete High School	6	10.8
Complete High School	3	5.5
Complete Higher Education	2	3.6
Mother's Occupation		
Farmer	52	94.6
Student	2	3.6
Teacher	1	1.8

Table 3 - Profile of children enrolled in the daycare center. Cuité, PB, Brazil, in 2011.

Variables	n = 55	
	n	%
Gender		
Female	29	52.7
Male	26	47.3
Age group		
<12 months	0	0
12 to 23 months	11	20
24 to 35 months	17	30.9
36 to 47 months	13	23.6
47-58 meses	14	25.5
Age of enrollment in the daycare center		
<12 months	12	21.8
≥ 12 or more	35	63.7
No Information	8	14.5

Table 4 - Anthropometric measures of the children from the public daycare center. Cuité, PB, Brazil, in 2011.

Variables	n = 55	
	n	%
Weight/age (W/A)		
Suitable for age	53	96.4
Female	27	49.1
Male	26	47.3
Low for age	2	3.6
Female	2	3.6
Male	0	0
Length-height/Age (H/A)		
High for age	1	1.8
Female	1	1.8
Male	0	0
Suitable for age	54	98.2
Female	28	50.1
Male	26	48.1
Body Mass Index (BMI)		
Risk for overweight	4	7.3
Female	1	1.8
Male	3	5.5
Appropriate	49	89.1
Female	27	49.1
Male	22	40.0
Slimness	2	3.6
Female	1	1.8
Male	1	1.8

DISCUSSION

Studies indicate that the monitoring of growth, as a state of cell division with increased body mass in a given unit of time, may be affected by bio-physiological and psychosocial changes^(3,5). "It is the expression of the extremely complex interaction between the individual's genetic potential and his living conditions which are determined by his social insertion"^(9:326).

Similarly to other studies, sociodemographic

characteristics found in mothers participating in this study reveal extremes of age, bigger number of children, low maternal education and higher number of residents per household, factors that directly influence directly the vulnerability of children to nutritional problems, and reinforce the urgent need of nutritional assessment, considered a health promotion activity within the model of health surveillance⁽¹⁰⁾.

Studies show that mothers with higher levels of education take care more effectively of their children, whether preventive or curative, such as better personal, environment and food hygiene, proper nutrition, which contributes directly and positively to better health conditions and adequate child growth, especially of children under five years old⁽¹¹⁾. However, the data from this study reveal that the majority of the children have appropriate weight and height for their age and among maternal profile one highlights the low education.

Although this variable was not evaluated, it is necessary to emphasize that children born into families with small inter-gestational interval and whose mothers did not have the support of parents in caring for their children, are more vulnerable to risk factors and effects which harm their physical, cognitive and psychosocial development⁽¹²⁾.

In this aspect⁽¹¹⁾, one adds that the increased number of people per household with the existence of many children, and among these, children under five years old are shown in this study, confirming what other studies express as conditions closely associated with nutritional risk, especially in underdeveloped countries.

The variables related to the home represent a set of intermediate causes in the determination of child growth, being also influenced by socioeconomic conditions. Thus, understanding that every individual is born with a genetic potential for growth, it may or may not be achieved depending on the conditions of life to which he or she is subjected, in particular, the environment in which he or she resides⁽¹¹⁾.

Under this perspective, some authors advocate the importance of an appropriate home space, when they show the direct relationship between the increase in the number of people cohabiting the same household and the chances of malnutrition, with consequences for the linear growth or height deficit⁽¹³⁻¹⁴⁾, considering that this is an event which is highly sensitive to the conditions of the social and economic environment in which the children live and their families⁽¹⁵⁾.

It is noteworthy that the precariousness of the household related to the basic conditions like availability of drinking water, adequate facilities for sewage and garbage disposal, as well as the inadequacy of correct practices of handling, storage, preparation and preservation of food, body and environment hygiene, favor the transmission of diseases and contribute to modify or harm the children's health status and nutrition⁽¹⁶⁾.

Then, it is necessary to understand that adequate nutritional status, good health, proper nutrition and living conditions corresponding to the needs of that age, particularly in the early years of life, represent essential criteria so that the process of growth and development is expressed with potential, reason why the children's growth assessment is often recommended⁽⁷⁾.

Concerning this information, it is possible to understand that, although the majority of the children have displayed normal percentile for weight and length/height for their age, with regard to gender distribution, girls had percentage of nutritional changes bigger than boys. This result corroborates a study that evaluated the growth and nutritional status of children in a daycare center, showing that the growth retardation in relation to sex is higher in girls than in boys, at a ratio of 12 to 9, respectively⁽⁸⁾.

It is noteworthy the absence of overweight and obese children in both sexes in this study, although some have been found at risk for overweight. One also found children with malnutrition, although a small percentage (3.6%). Studies show that being overweight is considered endemic in developed countries and has been quickly changing the nutritional profile in developing countries, evidenced by overweight and obesity bigger than malnutrition in children⁽¹⁷⁻¹⁸⁾.

In this study, the findings differ from some publications, as a study conducted in a community daycare center in the city of Fortaleza-CE, which found overweight in 13% of the children between 2 and 5 years of age and obesity in 14.5% of these, and these

data are consistent with those shown by the Ministry of Health⁽⁸⁾.

Currently, obesity is gaining magnitude as a public health problem in most countries. Worldwide, there are 17.6 million obese children under five years old. In Brazil, childhood obesity follows the trend of increasing prevalence in children under five years old ranging from 2.5% among children from lower income category to 8% in the economically favored group⁽¹⁹⁾.

Obesity is considered a nutritional disorder with the potential to trigger serious health complications in the individual, it may start in the intrauterine life and in childhood, with determinant factors such as the growth in gestational weight gain, early weaning, the inappropriate introduction of complementary food, the use of inappropriate prepared infant formula, besides eating disorders, changes in lifestyle with more time in front of television and computers, and in the eating habits with the largest amount of industrial products, with lots of sugar and fats⁽²⁰⁾.

However, the attitude of health surveillance with actions or preventive measures which aim to prevent the child from getting sick or grow improperly is essential for the professionals involved in child care, especially nurses, to recognize changes that initially seem to be insignificant, but which can trigger serious consequences in later life. As an example we have overweight, which is related to increased cardiovascular risk, hyperinsulinemia and insulin resistance, orthopedic disorders and psychosocial changes that harm children's quality of life⁽¹⁷⁾.

Under this perspective, assessing children's nutritional status means measuring the fundamental conditions for children to develop all their genetic potential. Thus, health surveillance as an attitude possible to be performed in all areas of child care, including in the daycare center, represents a plausible strategy for the monitoring and early identification of risk conditions that influence negatively the normal process of child development making it possible the

implementation of a care plan that contextualizes the real needs of the child, offering an integral and humanized attention to this priority group of the population⁽⁴⁾.

The daycare center while educational and also health institution may include in its structural, functional and pedagogical constitution favorable conditions for growth and child harmonious and integral development in their physical, psychological, intellectual and social aspects, such as healthy diet, proper hygiene, recreation and health education for children and their families.

Given these considerations, a concern is the deficiency in the performance of daycare center professionals concerning the guidance to mothers and lack of routine in the integral monitoring of the child, which is directly proportional to the identification of risk groups and the height changes that harm the appropriate process of children's growth; focus of children's health surveillance as a basis for comprehensive care to these little beings.

CONCLUSION

Through this study, one could identify that the change in nutritional status is something present in the pre-school context, noting that, although the majority of the children surveyed had normal weight for their age, excess weight was detected among existing nutritional disorders in this population, demonstrated by the existence of children at risk for overweight. One also detected thinness among children enrolled in the daycare center, which reaffirms the importance of the actions of child care with emphasis on health care as a strategy for identifying these changes in a timely manner and prevent possible complications that harm the adequate child growth and development.

This reality highlights the need for awareness of professionals involved in child health care to a more active and reflective attitude, with awareness of professional practice from the perspective of vigilance to promote the health to these children, as a way to

contribute to the autonomous process of self-care and adoption of healthy practices that provide the potential development of the children and, consequently, the formation of a healthy adult population.

In this perspective, it is pertinent to highlight the importance of this study as a basis for the prevention and control of overweight and obesity, since the daycare center, as an area of comprehensive health care for children, can provide knowledge of the real situation of these nutritional disorders, and thus provide conditions for nurses and the multidisciplinary health team to develop and implement an action plan of education in health for children and their families, promoting dietary and healthy life, as important requirements for improving the conditions of health, proper growth and prevention of nutritional disorders.

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