



## ADMINISTRACIÓN – GESTIÓN- CALIDAD

### PERCEPTIONS AND PRACTICES OF MOTHERS OF BRAZILIAN PRE-SCHOOL CHILDREN, WITH REGARD TO THEIR CHILDREN'S EATING PRACTICES

#### PERCEPÇÕES E PRÁTICAS DE MÃES DE PRÉ-ESCOLARES BRASILEIROS ACERCA DA ALIMENTAÇÃO DOS FILHOS

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### ABSTRACT

**Introduction:** In March, 2006, there were 5,588,153 children aged 4 to 6 years enrolled in Brazilian pre-schools. Unfortunately only 3.8% of these institutions have a health professional, in addition to which, the relationship between the pre-schools and the Health System is poor. The first 5 years of life are crucial in the development of good eating habits, and consequently, for preventing degenerative illnesses in later life, such as obesity.

**Objective:** The aim of this study is to identify and analyze maternal perceptions and practices concerning the eating behaviors of children aged 3 to 6 years attending a Brazilian pre-school.

**Material and methods:** A qualitative survey was carried out using individual, non-directive interviews. 21 mothers were interviewed: 10 with children enrolled in full-time classes and 11 with children in part-time classes. In terms of height and weight, the children were between the 10 and 90 percentile (NCHS standard). For data analysis we used the method of Thematic Content Analysis, as proposed by Bardin.

**Results:** Diet is an issue of major concern for these mothers. The main difficulty is child development: they do not know how to deal with it. Therefore, they use harmful strategies, such as bargaining, coercion, disguising food, and punishment. Also, they do not know how food is served in the pre-school. However, 15 of the 21 children improved their eating behavior after attending the institution (autonomy, regular meal times, and better meal choices), particularly those attending the pre-school on a full-time basis.

**Conclusion:** Brazilian pre-schools ought to implement health programs in partnership with the SUS (Unified Health System) - the Brazilian national health system.

## RESUMO

**Introdução:** Em Março de 2006, existiam 5.588.153 crianças de 4 a 6 anos matriculadas em pré-escolas no Brasil. Infelizmente, apenas 3.8% dessas instituições têm um profissional da saúde e, adicionalmente, não existe relação efetiva entre essas instituições e o Sistema de Saúde no país. Os primeiros cinco anos de vida são cruciais no desenvolvimento de hábitos alimentares saudáveis e, conseqüentemente, na prevenção de doenças degenerativas na fase adulta, assim como a obesidade.

**Objetivo:** identificar e analisar as percepções e práticas maternas sobre a alimentação de crianças de 3 a 6 anos que frequentavam uma pré-escola brasileira.

**Material e Método:** estudo qualitativo com entrevistas aprofundadas, individuais e não-diretivas, realizado com mães de pré-escolares, onde os critérios para inclusão foram: idade da criança entre 3 e 6 anos; tempo de frequência à pré-escola de, no mínimo 1 ano e peso da criança entre os percentis 10 e 90 (gráficos NCHS). Vinte e uma mães foram entrevistadas: 10 cujos filhos estavam matriculados no período integral e 11 no período parcial. Para a análise dos dados, foram utilizados os métodos da Análise Temática de Conteúdo, proposta por Bardin.

**Resultados:** a alimentação é assunto que causa preocupação e dificuldades para as mães, devido as mudanças peculiares ao desenvolvimento infantil. Devido a isto usam diversas estratégias negativas para tentar modificar o comportamento alimentar dos filhos, sendo elas: barganha, insistência, castigo e coação, além de misturar ou camuflar os alimentos recusados com os aceitos. Além disto, as mães não tinham informações sobre a alimentação na pré-escola. No entanto, 15 das 21 crianças melhoraram o comportamento alimentar depois de começarem a frequentar a instituição. Ficaram mais autônomas, passaram a aceitar novos alimentos e padronizaram os horários das refeições. As mudanças foram mais evidentes nas crianças que frequentam a pré-escola período integral (de 8 a 9.5 horas por dia).

**Conclusão:** as mães não sabem lidar, no domicílio, com as peculiaridades de desenvolvimento dos filhos na área de alimentação. Além disto, desconhecem seus comportamentos alimentares na pré-escola, onde há melhoras em comparação com o domicílio. Sugere-se melhorar a comunicação entre famílias e pré-escola, além de parceria entre estas e o sistema público de saúde.

## RESUMEN

En marzo de 2006, existían 5.588.153 de niños entre 4 y 6 años de edad matriculados en escuelas de preescolar en Brasil. Lamentablemente, sólo el 3.8% de esas instituciones tiene un profesional de salud y, además, no existe una relación efectiva entre esas instituciones y el Sistema de Salud en el país. Los primeros cinco años de vida son cruciales en el desarrollo de hábitos alimentares sanos y, consecuentemente, en la prevención de enfermedades degenerativas en la fase adulta, y también de la obesidad.

**Objetivo:** Identificar y analizar las percepciones y prácticas maternas sobre la alimentación de niños de 3 a 6 años que frecuentaban una preescuela brasileña.

**Material y Método:** Estudio cualitativo con entrevistas a fondo, individuales y no directivas, involucrando a madres de preescolares, donde los criterios para inclusión fueron: edad del niño entre 3 y 6 años; mínimo de 1 año de preescuela y peso del niños entre los percentiles 10 y 90 (gráficos NCHS). 21 madres fueron entrevistadas: 10 cuyos hijos estaban matriculados en el período integral y 11 en el período parcial. Para el análisis de los datos, fueron utilizados los métodos del Análisis Temático de Contenido, propuesto por Bardin.

**Resultados:** La alimentación es tema de gran preocupación para las madres. La principal dificultad se refiere a los cambios propios del desarrollo infantil: No saben lidiar con esos cambios y, así, usan varias estrategias perjudiciales, tales como cambalache, insistencia, castigo y coerción, además de camuflar o mezclar los alimentos recusados con los aceptados. Las madres en este estudio tampoco sabían cómo eran los momentos de alimentación en la preescuela, aunque 15 de los 21 niños mejoraron la conducta alimentaria después de frecuentar la institución (autonomía, mejora en el hábito alimentario y estandarización en los horarios de las comidas), especialmente los niños de período integral.

**Conclusión:** Las preescolas brasileñas deberían implementar programas de salud en colaboración con el Sistema Único de Salud.

## INTRODUCTION

### Brazilian data

According to the Educational Census carried out by the Anísio Teixeira National Institute of Research and Educational Studies<sup>(1)</sup>, 5.588.153 children aged 4 to 6 years were enrolled in pre-schools (kindergartens) in March, 2006. This figure represents approximately 55.1% of all Brazilian children within this age range, according to the UNICEF Brazilian Annual Report<sup>(1)</sup>. It is known that pre-schools attendance leads to better development of the individual<sup>(3)</sup>, therefore the lack of opportunity of attending these institutions, for about half of the population within this age range, is a serious problem. Furthermore, attendance rates vary widely according to socio-economic level. Amongst the poorest 20% of the population, only 28.9% of children attend this type of institution, compared to the richest 20% of the population, where the level of attendance is over 50%<sup>(2)</sup>.

There is a need to increase the number of pre-schools places in Brazil, but this number is increasing very slowly. For instance, from 2005 to 2006, we observed an increase of only 1%, i.e. 13,599 more children attending pre-school<sup>(2)</sup>.

Moreover, we face a great challenge because it is not enough simply to increase the number of places; we also need to improve the quality of education and care in these institutions<sup>(2)</sup>.

An important point to note is the existence of the health professional, be it in the pre-schools themselves, or within easy reach. Unfortunately, in 2000 only 3.8% of pre-schools in Brazil<sup>(4)</sup> had a health professional working within the institution (e.g. nurse, doctor, dentist, nutritionist).

In Brazil, the care of children in collective spaces, such as daycare centers or pre-schools, is a task of nurses from community health centers of the SUS (Unified Health System)<sup>(5)</sup>. The SUS was created in 1988 with the aim of changing the situation of inequality in the healthcare provided to the population, giving access to public healthcare for all. But there is no effective relationship between the crèches/pre-schools, and the National Health System, and as a result, healthcare is generally delegated to professionals other than nurses. In fact efforts are being to build this relationship<sup>(6)</sup>, but there is still a lack of nursing professionals in the SUS caring for children in pre-schools.

### The value of good eating behavior

Eating habits are influenced by educational interventions. It might even be said that the child is submitted to a "hidden agenda" at all times with regard to their eating practices. This hidden agenda takes place in the home, in the school, through colleagues, and through the media<sup>(7,8)</sup>.

Another problem is that in the suburbs of big cities like São Paulo, it is often difficult to obtain a wide variety of fresh fruits and vegetables, because they are not always readily available and because people are not in the habit of eating them<sup>(9)</sup>.

It is known that the first 5 years of life are crucial for the development of good eating habits<sup>(8,10)</sup>. Therefore we should focus our attention on pre-schools. Poor eating habits increase the likelihood of the individual developing obesity and degenerative illnesses<sup>11</sup>. This effect is worsened when associated with infectious diseases and low socio-economic conditions.

In Brazil, people are accustomed to consuming high amounts of sugar, and insufficient quantities of fresh fruits and vegetables <sup>(12)</sup>. According to the PAHO<sup>(13)</sup>, 2.7 million deaths occur each year which could be avoided by the consumption of fresh fruits and vegetables, as could diseases such as gastrointestinal cancer (19%), ischemic cardiac disease (31%) and cerebrovascular accident (11%). Concerned about this problem, some Brazilian states, such as Paraná, have created a state law which prohibits the sale of sweets, canned drinks and fried foods in school canteens throughout the State<sup>(14)</sup>.

Another important initiative was set up by the Brazilian Ministry of Health, together with the PAHO and the WHO, in which a proposal was elaborated for a balanced diet for Brazilian children aged over two years<sup>(15)</sup>. This document describes, among other things, the importance of consuming fruits and vegetables on a daily basis, as well as the foods that should be avoided. However, little mention is made of the behavior of the parents and other adults, a factor which we know is essential for establishing healthy eating habits among children.

A study carried out by Brown and Ogden<sup>(16)</sup> in the South of England, with 112 children aged between 9 and 13 years, and their parents, reinforced previous studies on parents' influence on their children's eating habits<sup>(17-19)</sup>, demonstrating that the parents' behavior during mealtimes influences the eating habits of their children and that the food choices made by the children follow the same pattern as the choices of their parents.

Usually, parents are concerned about the eating habits of their children. They know how important they are, but it is not easy to deal with the difficulties related to eating in this age range, which presents a real challenge for the family <sup>(20)</sup>. One reason for this is the change in the child's eating patterns caused by the different phases of development. Each phase has its own characteristics, as a result of biological, social and psychic factors <sup>(10)</sup>.

In this research, we selected pre-school children aged from 3 to 6 years. In this age range, the child is achieving more independence, and it is often difficult for the adult to cope with these changes. On the other hand, the pre-school period is characterized by initiative<sup>(21)</sup>, together with more complex cognitive abilities, which results in better learning opportunities. Therefore, this is a good time for the child to learn more about eating practices.

## **OBJECTIVE**

The aim of this study is to identify and analyze maternal perceptions and practices concerning the eating behaviors of children aged 3 to 6 years attending a Brazilian pre-school.

## **MATERIAL AND METHODS**

This is a qualitative survey, carried out using individual, in-depth, non-directive interviews. The interviewer asked the mothers to talk about her child's eating habits ("What do you think about the way your child eats? Do you have any concerns regarding your child's eating habits? What are those concerns? To your knowledge, do you think the pre-school has had any influence on your child's eating habits? How does your child eat when he/she is at home? Does he/she eat differently when at pre-school?). The interviews were carried out between June and September, 2004.

All the children attended the same public pre-school, located in the metropolitan region of São Paulo, Brazil. This area constitutes one of the largest urban conglomerations in the

world. It includes the city of São Paulo itself (the state capital) and 38 surrounding cities. It covers an area of 8,051 km<sup>2</sup> and has approximately 16.3 million inhabitants<sup>(22)</sup>.

This pre-school serves 369 children aged from 3 to 6 years. It is a philanthropic institution, which means the families do not pay for it. Meals are also free. Offering free food is a common practice in Brazilian public daycare centers and pre-schools. In 2004, 75,400 of these institutions had this sort of policy (57.1% of a total of 131,916 such institutions in Brazil)<sup>(23)</sup>.

Three educational projects are carried out with the children in this institution, to stimulate a better quality diet: the "Kitchen Garden Project", in which the children grow fruits and vegetables, and carry out research about planting in the pre-school library; the "Human Body Project", in which the children learn about the nutritional requirements of the human body and the "Chatting Circles Project", in which they discuss the values of the different food groups. The parents are informed about the projects carried out in the institution, at meetings held every two months, but there is no direct participation or work carried out with the families. The only information the family receives on eating habits in the Institution is a video, showing the children having their meals in the kindergarten. This video is shown at the first meeting with the parents, prior to the child attending the pre-school.

### **Sampling, data collection and analysis**

The inclusion criteria for the mothers interviewed were: children aged between 3 and 6 years, 11 months and 29 days; the child's having attended the pre-school for at least one year, and the child's height and weight to be between 10 and 90 percentiles (NCHS pattern).

The mothers were divided as follows: those with children attending the pre-school on full-time basis (8 to 9.5 hours/day, N=25), and those whose children attend on a part-time basis (4 hours/day, N=344).

Each of these groups was classified according to the child's age: 3 to 4 years, 4 years and 1 day to 5 years, 5 years and 1 day to 6 years, 6 years and 1 day to 6 years 11 months and 29 days. The only exception was for the age range 3 to 4 years, because there were no children attending the pre-school on a full time basis, only on a part-time basis. The mothers of each of these groups were then randomly selected.

Thus, there were mothers from each age and attendance range (i.e. full or part time). A sample of 21 mothers was interviewed. Ten were mothers of children who attended the pre-school on a full-time basis and eleven were mothers of children who attended on a part-time basis.

The ages of the mothers ranged from 24 to 53 years (mean=37, median=34). Three had incomplete high school education, five had studied for 11 years (in Brazil this represents complete elementary education), two had studied for between 8 and 11 years, four mothers had studied for 8 years and seven for less than 8 years.

The interviews were analyzed according to the D'Urung technique apud Bardin<sup>(24)</sup>. The techniques presented by Bardin and used to analyze the data from this research were: Pre-analysis, with the reading of the interviews, from which portions were selected which provided information relating to the nature of the research (units of significance), so constituting a research "corpus"; exploration of the material, with the selection of units of significance; and grouping by similarity. The groupings were created from a reading of the



interviews and the portions highlighted with the purpose of understanding their meaning, as expressed in words, intonation, interruptions, pauses, etc... After carrying out this procedure with each of the 21 interviews, new groupings and regroupings were created by affinities. After this stage, the data obtained were analyzed in relation to the statements, in isolation, by intra-comparison and by comparison with the literature. This stage also considered the characterization of the mothers, and the author's knowledge of them.

### **Ethical considerations**

This study was in accordance with Resolution 196/1996 of the Brazilian National Health Council, and approved by the Research Ethics Committee of the University of São Paulo School of Nursing. The mothers who were included in the study were informed about the research and accepted to take part. Their consent was given in writing, after they had been informed. To guarantee anonymity, the participants are identified by fictitious names

## **RESULTS**

Three categories were obtained: child dietary value; strategies used during meals, and the influence of the pre-school on eating habits.

### **The child dietary value**

The mothers of our study cared about their children's diet, and classified it as adequate or inadequate. They understood its value and also took into account its quality and the amount of food ingested, and the consequences for their children's health, although, for instance, they did not mention hypertension and diabetes. They reported the impact on their children's development and the occurrence of obesity. Mothers who reported that their children had poor quality eating habits became anxious and tried to make excuses for themselves during the interviews which demonstrates the importance the mothers attach to this subject.

### **Strategies used during mealtimes**

Of the 21 mothers, 16 reported using one or more types of strategy during mealtimes at home: bargaining, punishment, coercion, insistency, "camouflage" (mixing foods refused by the children with other types of food that the children like to eat), playing games, and offering preferred food. This type of behavior shows a lack of knowledge and confidence among the mothers, undoubtedly affecting their competence as promoters of healthy eating habits among children<sup>(25)</sup>.

Bargaining and insistence – consists of persuading or forcing the child to consume healthy foods in order to gain "candies". It is known that this technique is not effective because children start to hate healthy foods<sup>(26)</sup>. Thus, though the decision to use candies as a reward may produce a sense of gain in the short term, it reduces the acceptance of this food later on<sup>(26)</sup>.

Coercion and punishment – consists of exaggeratedly forcing the child to eat. As a result, mealtimes become "battle zones", reducing the pleasure of eating and bringing feelings of repulsion. In this situation, the adult is transmitting to the child the message that his/her internal sensation of being full is not relevant, which may impair the development of adequate self-control<sup>(8,27)</sup>. As a result the child may start to depend on external commands to start, continue and finish his/her meals.

Game Play – in this case games are used inappropriately, in an attempt to get the child to consume the amount of food the adult wishes. This practice is harmful because it causes the child to lose the sensation of being full, making him/her believe that the ideal amount of food is what is imposed by the adult. It should be emphasized, however, that play activities are appropriate if properly used.

“Camouflage” – masking food so that the child does not recognize it. This can make the child unable to face challenges. Besides, it is not correct to offer only food that children like and accept. In the long term, it leads to boredom and the child becomes indifferent.

However, the use of appropriate strategies were also reported by some mothers (two out of sixteen mothers): encouraging the child to use the touch and smell; using kitchen gardening so that the child feels valuable when planting and collecting the foodstuffs; encouraging the child to prepare and appreciate the refused food, and the use of melodramatic language (pretend and make-believe) so that the child can recognize characteristics and functions of the different food types.

### **The influence of the pre-school on the child's eating habits**

Although the mothers said they did not know about the eating practices at the Institution, 15 of the 21 mothers reported a positive change in their children after they started to attend the pre-school. These included: acceptance of different type of meals, more autonomy to help themselves, and standardization of the schedule of mealtimes.

Of the 10 mothers whose children attend the pre-school full time, 9 recognized positive changes in the eating behavior of their children, namely: greater flexibility towards tasting new types of food and the children starting to eat foods they had previously refused, a fact reported by all the mothers. The mothers believe that these changes are due to the social environment of the pre-school, where the children are encouraged to eat, and learn how important it is to eat different types of food, besides the greater variety of food offered. Consequently the children improve their eating behavior.

Of the children who attend the pre-school on a part-time basis, only two out of the 11 had improved their eating practices and started to accept foods they had previously refused. These two mothers attributed this change to the physical activities and the favorable social environment of the pre-school. It was evident that their improvement was not as significant as that of the children attending full time.

### **DISCUSSION**

The mothers of the children who attended the institution full-time (8-9.5 hours per day) reported that their children had better eating habits, which was more frequent than the mothers of those who attended on a part-time basis. Curiously, this occurred in a pre-school which, despite its incentives and education projects for food, we cannot consider as satisfactory in this area. We must remember that the only information the mothers receive is a video with some scenes filmed inside the preschool. The children shown on the video are not their own children, since the video is shown before the children attend pre-school. The mothers therefore attribute the positive changes in the eating habits of their children to reasons do not know. In spite of this, it is commonly known that social group is a positive stimulator of eating behavior. Also, the idea makes sense that in pre-school, the children get to know different types of food, and come into contact with different physical activities.

On the other hand, children who attend the institution for just 4 hours a day receive fewer of these benefits, as they only receive a snack (in the morning or afternoon) and participate in a smaller number of activities with their colleagues. Also, their lunch (made at home) needs to be taken late (for those children who attend the institution in the morning) or early (for those who attend in the afternoon) but if they attend in the mornings, they are often tired by the time they get home, and fall asleep. Those children who attend in the afternoon often have lunch at home before they are hungry, according to what was reported by some mothers.

Children attending full-time receive all the meals: breakfast, mid-morning snack, lunch, mid-afternoon snack, and soup for dinner (at about 5:00 pm). It is expected that the children will have dinner at home, before going to bed. Additionally, these children participate in all group activities, and it should be noted that after lunch they can take a nap, for which the institution provides mattresses, pillows and bedclothes.

The institution where this study was conducted, despite taking some encouraging steps towards promoting good eating behavior, still has much room for improvement. For instance, there is an evident lack of an incentive program to educate parents and build their self-confidence <sup>(25)</sup>.

The organization of care regarding feeding practices requires theoretical knowledge and systematization. This is an action which involves health professionals, as well education professionals. A national program is needed in which nursing schools and national nursing associations could make a significant contribution.

If we were able to obtain good results (for the full-time children) in this pre-school which, despite the incentives and educational projects to promote good eating habits, still cannot be considered satisfactory in this area, then this gives us hope for the success of a higher level of strategic planning covering the entire country.

## **CONCLUSIONS**

1. Children's eating habits are very important, in the opinions of the mothers interviewed. The mothers use many strategies in the attempt to promote good eating practices in their children.

Eight inappropriate strategies were found, which could lead to poor eating habits, since they interfere in the process of self-knowledge and self-control.

2. Although the pre-school in which this study was carried out had projects to promote dietary education, we could not consider it satisfactory. Parental education, for instance, was given an inadequate and incomplete approach.

3. The children who attended pre-school on a part-time basis presented the least satisfactory results, according to their mothers. Nevertheless, this type of attendance is a common practice in our country, and many institutions exist where there are "shifts" or attendance periods during the day: the first from 7 a.m. to 11 a.m., the second from 11 a.m. to 2 p.m. and the third from 2 p.m. to 5 p.m. These scheduled times enable the school to enroll more children. Although this is a strategy to increase the benefits of being in the school to a higher number of students, it may lead to a lack of quality. However, no reports of poor eating practices have so far been reported. In this case, the drawback factor is related to a greater or less chance of forming adequate eating habits, which is something that can improve and strengthen the child's self-control, and is an important factor for avoiding obesity and other diseases in later life.



Thus, it seems that full-time attendance preserves the child biocultural rhythm, including the eating rhythm. Also, it gives the child greater educational opportunities.

4. Brazilian pre-schools ought to implement health programs in partnership with the SUS, and under its supervision.

### **Limitations of the study**

This study was carried out in only one pre-school. This is obviously a limiting factor, despite the fact that this specific institution is governed by the general laws concerning this kind of setting in the State of São Paulo. Another important limiting factor is that it was not possible to analyze other pre-schools with excellent attendance, in relation to their promotion of good eating habits. Certainly, this type of comparison would reveal more information about this subject.

### **Recommendations**

Day care centers and pre-schools concentrate a high number of children and adults. Both are potentially “educable” individuals when it comes to good eating practices. We therefore urge Brazilian nurses and other health professionals to take advantage of this excellent opportunity to improve health patterns, by adopting a “health curriculum” in our pre-schools. Eating practices at the day care centre or pre-schools is a task which ought to be planned in association with families, according to the Brazilian Children National Curricular Guidelines<sup>(28)</sup> and their families need assistance in promoting good eating practices. In a more ambitious, but feasible way, day care centers and pre-schools can act of centers of human development, developing the skills of teachers, children and families.

For future research, it would be interesting to investigate maternal practices in relation to children in different percentile ranges.

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