

## FEEDING PRACTICES FOR MALNOURISHED CHILDREN UNDER TWO YEARS OLD

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### ABSTRACT

**Objective:** Analyze food practices of un-nourished children under two years old. **Method:** Exploratory, descriptive and qualitative study. Data were collected through participant observation and interviews. Participants were 42 subjects. The data were subjected to thematic analysis. **Results:** The following themes emerged when addressing the eating habits of those children: Who prepares the food and what is prepared; How foods are prepared; Children's eating routine; Where and how children are served. Food was varied little, with lacteous food at breakfast and snacks, and with food such as rice, potatoes, beans and sometimes meat at lunch. Fruits and vegetables were scarce and processed foods were present in all homes. **Conclusion:** It was possible to learn the daily eating habits, their inadequacies, insufficient food, poor hygiene of complementary food, influence of grandmothers, inappropriate environment for meals and families' living situation.

**Descriptors:** Infant. Feeding. Infant malnutrition. Mothers.

### RESUMO

*Analisar práticas alimentares de crianças desnutridas menores de dois anos. Estudo exploratório e descritivo, com análise qualitativa dos dados, realizado a partir de observação participante e entrevistas. Participaram 42 sujeitos. Os dados foram submetidos à análise temática. Ao explorar as práticas alimentares dessas crianças, os temas que emergiram foram: quem prepara a alimentação e o que é preparado; como são preparados os alimentos; a rotina alimentar das crianças; onde e como as crianças são servidas. A alimentação era pouco variada; láctea, no café da manhã e lanches, e no almoço com alimentos como arroz, batata, feijão e, às vezes, carnes. Frutas e hortaliças eram escassas, e alimentos industrializados estavam presentes em todos os domicílios. Foi possível apreender o cotidiano das práticas alimentares, suas inadequações, insuficiência de alimentos, higiene precária dos alimentos complementares, influência das avós, ambiente inadequado às refeições e situação de vida das famílias.*

**Descritores:** Lactente. Alimentação. Transtornos da nutrição do lactente. Mães.

**Título:** Práticas alimentares de crianças desnutridas menores de dois anos de idade.

### RESUMEN

*Analizar los hábitos alimentarios de niños malnutridos menores de dos años. Estudio exploratorio descriptivo cualitativo, con análisis temático de datos, recolectados por observación participante y entrevistas. Participaron 42 sujetos. Los siguientes temas emergieron de indagaciones acerca de los hábitos alimentarios de los niños: quién prepara la alimentación y qué se prepara; cómo se preparan los alimentos; cómo es la rutina alimentaria de los niños; dónde y cómo los niños son servidos. La alimentación era variada poco, con alimentos lácteos en el desayuno y meriendas; y alimentos como arroz, patatas, frijoles y carne a veces para el almuerzo. Frutas y verduras eran escasas y alimentos procesados estaban presentes en todas las casas. Fue posible saber acerca del cotidiano de las prácticas alimentarias, sus inadecuaciones, insuficiencia de alimentos, higiene precaria de alimentos complementarios, influencia de las abuelas, ambiente inadecuado para comidas y situación de vida de las familias.*

**Descritores:** Lactante. Alimentación. Trastornos de la nutrición del lactante. Madres.

**Título:** Hábitos alimentarios de niños malnutridos menores de dos años de edad.

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## INTRODUCTION

The first two years of life are characterized by an intense growth and development thus, feeding processes, at this time, echo throughout the life time. Adequate nutrition is fundamental to the nutritional disorder prevention such as malnourished, obesity and anemia. Throughout this phase, it is recommended that child gets exclusively breast feeding until he/she turns six month old. After that, introduction of complementary food must get started, but keeping breast feeding up to two years old or more<sup>(1-4)</sup>.

Complementary food current situation features the introduction of early feeding, late salty food and unhealthy food consumption<sup>(5-6)</sup>. Various factors have been associated to such panorama, underlining age, studying and working mothers, primiparity and the family's socio-economic level<sup>(5-8)</sup>. However, feeding practices go beyond nutritional recommendations giving place to cultural identities, family memories expressed in their choice, means of preparation, consumption and a will for certain kinds of food<sup>(9)</sup>.

Studies on feeding practices throughout childhood clarify some of those questions, making them critical due to children feeding. Mothers place doubts related to complementary food, they suffer high influence from female family members that already fed their own children, and they offer their kids whatever they consider adequate and food which are common to the family<sup>(10-13)</sup>.

Political polices point toward the need to ensure quantities and quality to the supplied food available, promoting healthy feeding practices, preventing and controlling nutritional grievances and stimulating inter-sectoral actions for an effective food access<sup>(14)</sup>. The Family Budget Research (POF) 2008-2009<sup>(15)</sup> shown improvement over the Brazilian families' food situation in the last few years, it is represented by an evaluation on life conditions. However, there are families that survive with insufficient incomes to be used on food supplies.

Researches call for a decrease on the amount of malnourished children. Therefore, it is still a matter which involves children in families that live under an unfavorable socio-economic condition, being considered a multi-cause disease, directly influenced by lack of food and indirectly by the environment where they are raised<sup>(16-17)</sup>.

Once infant feeding process influences children nutritional status, the current study aimed to analyze malnourished children feeding practices under two years old and to describe relevant aspects on these children eating practices in a contextualized reality.

## METHOD

A descriptive exploratory study, with a qualitative approach<sup>(18)</sup> was performed in the city of Guarapuava, Paraná State. It was made an option for such a lining in order to capture family experiences and to explore the daily feeding processes of malnourished children in the environment where they took place.

Regarding children selection, firstly, it was done an anthropometric evaluation on all the children under two years old, in four different health unities located in the county's periphery. Those who presented anthropometric indexes weight/age (W/A) and/or height/age (H/A) under percentile three were included in the experiment. Such cut off point is recommended to classify children that present low weight for their age and low height for their age as well<sup>(19)</sup>.

Participants choosing process was intentional, aiming to study the specificities of families' experiences with malnourished children. Inclusion criteria were: children under 2 years old, malnourished, being treated in health unities and mothers that stay home most of the time. Exclusion criteria were: pre-mature children, with weight inferior to 2500grams, twins, children caring some other health problem, nursing home attendees, those who were taken cared by other people besides their mothers and working mothers. Starting from this point out, in a group of 25 families with malnourished children, eight out of them took part on the experiment. These families had in total eight mothers, four fathers, eleven children, five grandmothers, four uncles and two cousins, totalizing 42 individuals.

Data were collected using participant observation techniques and semi-structured interviews, focusing on their homes' feeding practices. Observation was conducted by means of weekly house visits to the children's homes, according to pre-established appointments scheduled by the mothers. Seven visits were done to each family, in average,

a total of 56 home visits, with an hour and a half up to two hours long, each visit. Field diary notes underlined the main points regarding the study aims, notes were performed during and after the visits. Interviews were given by the mothers in their homes, following a script that was elaborated with questions about malnourished children. They were performed, generally, in the last feeding practice observation day, taking about 30 to 45 minutes long, and being recorded with the mother's authorization. Involved individual agreed on the participative observation data and on the interviews used for the research.

Data were submitted to thematic analysis<sup>(18)</sup>. Organizing the whole empirical material was processed during and after data collection. The analysis required reading and re-reading all the transcription, within a group floating reading, looking forward to identify tendencies and relevant ideas on the feeding practices and on the mothers reports, inserted in their life contexts.

Grades extracted from eight field diaries are represented by the subtitle DC (DC1, DC2, ... DC8) and by the speech of eight interviews by subtitle E (E1, E2, ... E8), ensuring the individuals anonymity. The formal study was made in accordance to the Rules and Ethical Polices on Resolution CNS 196/96 from the Health Ministry and approved by the Ethics in Research Committee from the West Center State University (UNICENTRO) (Memo # 0113/2007 – COMEP/ UNICENTRO).

## RESULTS AND ARGUMENTS

When exploring children feeding practices such themes emerged: Who prepares the food and what is prepared; how the food is prepared; the children's feeding routine; where and how children are served. Outcomes made it possible to understand that children's food was tight to social, economic, cultural and emotional factors, and that such apprehension brought up subsidies for health actions and for feeding young children.

Children age could vary from 11 up to 23 month old, they all featured as malnourished (Index W/A and/or H/A under percentile three)<sup>(19)</sup>, within hospitalization background based on respiratory and intestinal infections and they were all breast fed, for at least an eight month

period of time and for mostly a year and eleven months long. Complementary food introduction time happened between the third and fourth month of life. Some children were born from teenage mothers, mothers' school level was low (less than eight years at school), some mothers had more than three kids and fathers not usually lived with the children.

### Who prepares the food and what is prepared

Mothers were the main responsible ones for preparing the children's food and in three houses grandmother played the main role on preparing and on choosing their food. Domestic function of food preparation remains as a female activity as well as in some other studies which also describe the feeding practices approach<sup>(10,20)</sup>. Grandmothers influenced children's feeding, telling mothers what to prepare and offer to the child.

*Grandma said 'don't give meat, otherwise she won't eat the food'. The mother started to just offer soup with carrot pieces and zucchini, putting the meat aside (DC2).*

Mothers feel safer and prefer following grandmothers' experiences, and follow experiences of other family members that already had children, instead of listening to the health professional recommendations. Thus, grandmothers' influence can have positive or negative consequences in children feeding<sup>(10-11)</sup>.

Home visits were performed close to the food preparation time, usually, lunch was observed, also the noon snack and, sometimes, breakfast. Meals offered to the children can be seen bellow:

*Breakfast: Coffee with milk and pretzel (DC1).*

*Lunch: Rice, black beans, pasta, pork meat and yogurt (DC3).*

*Noon Snack: milk mush, cookies and milky flour (DC8).*

There was milky food for breakfast and for noon snack. Rice and beans combination for lunch was also present in many meals, potatoes and pasta were offered even when there was rice in the plate, showing a carbohydrate excess, while meat was not included in all the meal. Fruits and vegetables were

available on the mothers' reports as an example of healthy food however in a daily bases routine they did not offer such food to their kids.

*"[...] I think that we must choose the food well to give to the children, don't give them just junk food, give them vegetables, greens, fruits, which children must eat a lot [...]" (E5).*

Only two mothers offered fruits to their kids during observation time. It was possible to see in some houses fruits as apples, bananas, oranges and lime available. Greens are also showed just a few times, usually, they were present in the soup.

Industrialized food was present in all the visited houses and was seen as sausages, canned food, artificial coloring products, salty foods, sweet food, sodas, cookies and mayonnaise. Many of these foods were considered inappropriate by the mothers and said that should just be given every once in a while. However, on mothers' reports we could see that speech was different from daily practices.

*"[...] depending on the food, there are things we can't give them, you know, for certain ages. Junk food, cookies, yogurt, soda, these kind of crap [...]" (E8).*

Mothers brought in to their speech aspects of a health food feeding and of a scientific discourse, however, by the time they were preparing and choosing the food, they were influenced by socio-economic situations as well as by food preferences, culture and the food available at home. The current study could not directly investigate the families' monthly incomes, but during house visitation time some situations made us believe that economic issues could interfere in the children's feeding process.

In two particular houses it was possible observing that as soon as the family got their salary or when the social programs income was wire transferred to their account was done, more food amounts and variety was available, by half of the month availability was shorter and was taken to basic food (rice, beans and pasta). Food such as fruits, vegetables and meat were over and would just be presented again on the next payday.

Feeding, besides its biological needs, is a socio-cultural phenomenon, and food choices made are based on the cultural surrounds, which define the food selection, placing rules that prescribe, forbid

or allow what to be eaten<sup>(9)</sup>. Industrialized food, considered unhealthy by a nutritional viewpoint, is full of symbolic values and is associated to affection dimensions, what means, offering what is not fundamental translates to parents and kids an act of affection, even if such consumption means taking away some other goods<sup>(20)</sup>.

Parents associate the excess of such food as a way to let the kinds vulnerable to diseases and that they are bad for health, however, they justify the offer by the kids' adequate growth and development or by the children's acceptance to this type of food<sup>(13)</sup>.

### How the food is prepared

During the preparation of the food that is offered to the children, aspects referring to food hygiene had emerged, underlining food's conservation and storage, hands' hygiene, artifacts used, kitchen environment and maternal smoking. Bellow, we have field notes showing some of these aspects:

*For lunch, the grandmother heated a "virado de feijão" (Brazilian typical dish) beans that was kept in a pan, added some salt and fat that was in a bottle, it looked like some frying oil leftover (DC5).*

*The mother cleaned the child's nose and turned back to the food preparation, I didn't see her wash her hands (DC1).*

During food preparation, mothers did not have the habit to often wash their hands. Baby bottles were cleaned along with other used artifacts just with water and soap, or water, only. It was seen baby bottles in the cabinets, on the tables and in shelves, with leftovers in it, as well as perishable food as milk, under room temperature. Some mothers showed a hard time to organize the kitchen, tables were full of food left from the last meal and dirty dishes, and there were clothes all over the floor. Three mothers were smoking during food preparation process, while were breast feeding and when close to the children.

Hygiene practices could interfere in the children's health status causing food contamination. Complementary food hygiene provides and reduces diseases as diarrhea and its negative repercussions in the children's nutritional status<sup>(2-4)</sup>.



Therefore, houses had just a few rooms and kitchen was not usually well equipped with adequate furniture, due family's financial issues. Besides that, it is difficult to change habits established throughout life and mothers could not identify dangers on the regular practices. Mothers had low school level. It could also have a negative interfere in the good hygiene practices making it harder to understand the dangers associated to lack of hygiene.

### The children's feeding routine

Children breakfast food was, basically, milk and cereal (Mucilon™ and milky flour) offered as milk mush, porridge or in the baby bottle. Black coffee and milk also appeared in some reports and observations.

Family food was eaten by the children at lunch (rice, beans, pasta, potatoes and meat), although two mothers cooked soup. Noon snacks had the same food as for breakfast, however fresh fruits or fruits and cereal were mentioned by the mothers.

Dinner was similar to lunch, but food as porridge and soup had appeared. Children which were breast fed, got some milk before going to sleep and the others got their baby bottles.

Starting from mother reports and observations, it was possible to understand that the children's diet did not show a large variety, meat was not offered in a daily bases and, generally, food offered to the children was milk, cereal, rice, pasta, flour, cookies, potatoes and black beans. Soups were part of their main meals, such a common practice among some mothers, although this kind of preparation presents low energetic density and must be unadvised<sup>(2)</sup>.

Food variety must be offered to children to ensure that needed nutrients be consumed creating good eating habits. Meats, poultry, fish or eggs provide nutrients such as iron and zinc; grains and vegetables in the same meal ensure quality proteins; fruits and greens are a source of vitamins; milk and its dairy are a source of protein and calcium<sup>(1-4)</sup>. National and international organs recommendations might not be followed by mothers because of their socio-economic situations, their food preferences, culture and food available in the house.

The complementary food phase is considered a critical one and mothers have many doubts about

what can be offered to children<sup>(12,17)</sup>. Besides doubts on children feeding, the low variety diet could be a reflex of the families' socio-economic situation, according to the report below:

*"[...] I think that what we can do, we do for her, and I say already, we are poor, they don't have the good and best stuff, but at least beans and rice they have [...]" (E1).*

Research data from the Family Budget Research<sup>(15)</sup> show that 75% of the families present a hard time reaching the end of the month with their total income and 35.5% say that the amount of food eaten is insufficient. The research points out improvements when we compare current data to data from former researches (2002-2003), however, yet, an expressive amount of Brazilians do not have enough food for the month through. Such data reinforce, partially, malnourished as a social matter that affects families in the less favorable classes<sup>(16-17)</sup>.

### Where and how children are served

Children were served by mothers, grandmothers, brothers or did it by themselves. When they were fed by their mothers or grandmothers they eat a bigger amount of food, but, when they were eating alone they showed a hard time dealing with the cutlery, and ended up eating with their hands, dropping food on their clothes and on the floor, playing with the food and, so, eating smaller amounts of food. Besides that, they would gather food from the floor or on their clothes and eat it, their mothers were not always paying attention on them, and it could represent a contamination risk to the food and, consequently, interfere in the children's health. Bellow, a field note that shows such situation:

*The child had a hard time to eat on her own, the pasta was slipping and falling on her clothes, she was taking it with her hands, afterwards trying again with the spoon and then she went on eating very slowly (DC1).*

Adults must encourage children to use glasses when drinking liquids, to manipulate food and eat with their own hands, although always under supervision, so they can make sure that children are eating enough. It is not an easy task and acquire patience once they eat slowly, can get messed and easily distracted<sup>(2,4)</sup>.

Mothers and grandmothers were taking care of other children, preparing the family meal and housekeeping; it could hamper the food offering and supervising the child while he/she was eating on her/his own.

Meals were served in the kitchen or in the living room and children eat set on their mother's lap, on chairs, couches, strollers, on the floor or just standing steal. People not always had rooms or furniture adequate for having their meals, so children did not stop walking around while eating, they kept on playing and watching TV, and such situation made mothers anxious because children, often, did not eat enough.

The environment where food is offered is fundamental once it helps or not, food eating. Children must be comfortable during eating time, because, most of the time, it is not possible for most of the population, once they just have bad housing and hygiene conditions, unfavorable economic situation and socio-cultural patterns hard to be changed<sup>(2)</sup>. It was seen that aspects due to environment did not help food ingestion among children participating the experiment, what could put in risk their nutritional status.

Children, when fed by their mothers and grandmothers, first ingested carbohydrate based food (rice, pasta and potatoes, mixed with black beans or soup) and meat was served in the end of the meal. They did not offer meat, because they thought that children were chewing for too long and ended up not eating the rest of the food. Once the meal was over, they offered meat to them, but children were already full and so, just eat or ingested a little amount of it.

*Meat was left on the plate and just in the end the mother cut it into pieces and served to her kid, but he didn't eat (DC3).*

Food of animal origin, specially, meat, supply high quality protein and is a source of haem iron, which is better absorbed by the organism. Gains and vegetables, such as rice and beans, should be taken daily in the same meal, to ensure the correct amount of adequate quality protein, if food or animal origin is not ingested in the correct amount<sup>(1-4)</sup>.

Some mothers just dropped the beans' broth over the plate and a few grains of it and, when offered that to the children, they served mainly, the

broth. The beans' grains were seen as "heavy", and could cause diarrhea and children would not be able to chew and swallow. Children feeding practices are surrounded but eating beliefs that are inherited over the generations (grandmothers, neighbors, aunts, and godmothers) and can interfere in the children's eating habits formation.

Offering first some food rather than other and do not offer the beans grains show that mothers developed mechanisms to interpret past experiences due to children feeding, starting to dominate the amount and the kind of food to be offered, according to what they believed to be the most appropriate in that particular meal<sup>(9-10)</sup>.

Another observed practice during the meals (lunch), in five homes, was the milk and dairy offers along or right after the meal was over.

*The mother prepared the kid's plate: rice, pasta, beans broth, and in a glass she put yogurt. "[...]". She was giving one at the time, food and a sip of yogurt "[...]" (DC3).*

During the main meals it is worthy avoiding milk, tea, mate tea or coffee, once they decrease the non-haem iron absorption<sup>(2-3)</sup>. However, aiming to have a well fed child, some mothers develop inadequate feeding practices, such as replace meals for baby bottles or milk, stating that the child does not eat or chew<sup>(12)</sup>.

Mothers and grandmothers served meat in the end of the meal and did not offer the beans' grains, yet, offered milk, what interferes in the non-haem iron absorption. Such eating practices can be interfering in the ingestion and absorption of essential nutrients to the organism. In another hand, milk offering after meals can be a way to compensate the short amount of food children eat.

## CONCLUSION

Throughout this study there was an understanding that the children's nutritional status was related to a lack of food variety, to grandmothers' influence, complementary food bad hygiene, inadequate eating practices, lack of food, inadequate environment to have the meals in and the families' life situation.

Getting to know where the children live, their family's life situation and their values and beliefs can help the health professionals promoting health

eating practices, with adequate food due to a quality and cultural acceptance viewpoint as well as helping them to lead malnutrition to a focused treatment.

Our edge, in the current study, was deep in on malnourished children feeding practices routine, all of them subscribed to four health units in the county, what ensures that outcomes cannot be generalized. It is important to point out that other debate spots and research can bring up new perspectives, so it is important to develop studies to investigate strategies used by health professionals aiming to integrate feeding processes knowledge to the needs of infant populations.

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