

# Pacifier Habit: Study of Family Dynamics from the Perspective of General Systems Theory

Hábito del Chupete: Estudio de la Dinámica Familiar Desde la Perspectiva de la Teoría General de Sistemas

Adriana Dantas Costa<sup>1</sup>; Eliana Dantas Costa<sup>2,3</sup> & Rosana de Fátima Possobon<sup>4</sup>

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**ABSTRACT:** This study aimed to know perception of the marital subsystem (parents) and to understand the dynamics of the family system in offer of pacifiers. Ten couples, parents of children between 4 and 7 years old, were interviewed by means of a semi-structured script of questions about the offer of pacifiers for their children. Answers by qualitative method of content analysis, using predefined categories of the General Systems Theory (homeostasis, circularity, globality, non-summativity, morphogenesis and equifinality). Pacifier offer reestablished the Homeostasis related to adaptation of mother in postpartum period; in introduction of artificial nipples due to allergy to breast milk and to avoid thumb sucking. Circularity occurred in paternal support to stimulate breastfeeding and in offer of pacifier to reduce the dependence of baby regarding the mother. Globality occurred when offer of pacifier softened mastitis and colic of baby. Non-somivity was evidenced in the mother's attitude in controlling behavior of children with offer of pacifier. Morphogenesis predominated in influence of external systems (health, school, kinship, marketing and social media) on family decision to offer pacifiers. Offer of pacifiers interfered in Equifinality, favoring the organization of family system in face of complications in breastfeeding. Offer of pacifier sought to meet emergency needs of baby, although there was a perception of consequences for child's health in long term. General Theory of Systems allowed verifying the dynamics of family system, which can be applied by health professionals in order to understand the factors involved in offer of pacifiers.

**KEY WORDS:** pacifier, family, systems theory.

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## INTRODUCTION

Seeking children's quality of life and health, national and international public policies have established goals (Malta, 2019), including those associated with oral health (Castilho *et al.*, 2013). In this regard, it is important to consider that oral health care can be affected by habits acquired in childhood, such as the use of pacifiers, in which the family has a fundamental role (Castilho *et al.*, 2013).

It is observing a fragmentation in studies related to pacifiers, which either go by a biological strand, regarding the harm to the child's health (Castilho & Rocha, 2009) or by a psychological/behavioral one,

seeking to understand the reason for its offer (Sertório & Silva, 2005) or the effectiveness of guidelines for its removal (Giugliani *et al.*, 2019). However, the family's fundamental role is present in both strands.

The General Theory of Systems developed by Ludwig von Bertalanffy in the 1920s seeks to evaluate the integrated conception of life (Bertalanffy, 2015). Thus, a system can be defined by the multiple interaction between its elements and subsystems, encompassing from the biological to the social system (Galera & Luis, 2002). Thus, the family consists of a system composed by interdependent subsystems

<sup>1</sup> Department of Community Dentistry, Piracicaba Dental School, University of Campinas, Piracicaba, SP, Brazil.

<sup>2</sup> Division of Oral Radiology, Department of Oral Diagnosis, Piracicaba Dental School, University of Campinas, Piracicaba, SP, Brazil.

<sup>3</sup> Department of Dental Materials and Prosthodontics, School of Dentistry, University of São Paulo, Ribeirão Preto, São Paulo, Brazil.

<sup>4</sup> Department of Community Dentistry, Piracicaba Dental School, University of Campinas, Piracicaba, SP, Brazil.

[(e.g.: parental (parents/children), marital (husband/wife) and fraternal (siblings)], which suffer mutual influences (Celestino & Bucher-Maluschke, 2015). Thus, the main axiom of this theory considers that human problems have a circular structure, that is, an interactive pattern (Celestino & Bucher-Maluschke, 2015). In this sense, family dynamics and the health-disease process are related in a movement in which both mutually affect and modify each other (Galera & Luis, 2002).

In view of the above, due to the influence of the family system on the use of pacifiers in childhood and to little is known about its dimension from the perspective of the General Theory of Systems, this study sought to know the perception of the marital subsystem (husband/wife) and to understand the dynamics of the family system (parents/children) in the offer of pacifiers.

**MATERIAL AND METHOD**

The study was approved by the Research Ethics Committee (CAAE: 1086818.3.0000.5418) and all participants signed the informed consent form. The Consolidated Criteria for Reporting Qualitative Studies (COREQ) (Tong *et al.*, 2007) were used.

**Sample selection and characterization.** To participate in this study, 10 couples were invited, all participants of a previous study (Costa *et al.*, 2021), parents of children between 4 and 7 years of age, students from the kindergarten/elementary school of a medium-sized countryside municipality from São Paulo state. The number of participating couples was defined by the saturation of the answers, that is, when the information from the new participants did not add new information to the predefined categories (Costa *et al.*, 2020).

**Data collection.** The couples were interviewed individually, using a semi-structured interview model, containing the following guiding questions:

- How was the offer of the pacifier in your child's life?
- What motivated the offer of the pacifier to your child?

The interviews were recorded in audio (Samsung J5) and video (Digital Camera, Sony Cyber Shot DSC-W690 16.1mp). Each interview took approximately 15 minutes and was later transcribed using Microsoft Word. The participants' answers were coded, mothers with letter M and fathers with letter P, and identified with a number corresponding to their order in the interview, for example: M/P1 for the first couple interviewed. The children were identified as F1 (for the firstborn), F2 (for second child) and F0 for a single child (Mendes, 2007).

**Data analysis.** The data were analyzed using the qualitative method of content analysis. Two researchers individually selected the excerpts of the interviewees direct speech, which included aprioristic (predefined) categories to the concept of the General Theory of Systems (Moraes, 1999; Bardin, 2016): homeostasis (self-regulation seeking stability/system functioning) (Bousoo, 2008; Gomes *et al.*, 2014); circularity (interaction between the members of the system, which influence and are influenced among themselves generating a cycle of action/reaction) (Bousoo, 2008); globality (cohesion among system members who are affected by changes in one of the parties) (Bousoo, 2008; Gomes *et al.*, 2014); non-summativity (a system is not the sum of the parts, since each member presents its individuality) (Gomes *et al.*, 2014); morphogenesis (ability of the system to absorb the external aspects/information of the environment in which it is inserted and how these elements influence its internal organization) (Bousoo, 2008; Gomes *et al.*, 2014);

Table I. Frequency of recurrence of concepts at each interview

Categories/concepts	Interviews										Total recurrences (%) **
	1	2	3	4	5	6	7	8	9	10	
Homeostasis		X	x						x	x	4 (40)
Circularity		X	x		x	x		x	x	x	7 (70)
Globality									X	x	2 (20)
Non-summativity				X	x	x			x	x	5 (50)
Morphogenesis	X	x	x	x	x		x	x	x		8 (80)
Equifinality			X	x				x	x		4 (40)
Total appearance of new concepts in each interview	1	2	1	1	0	0	0	0	1	0*	-

\* Saturation was observed in the 10th interview, since all concepts were addressed in the first nine interviews. X: recurrence. X: New appearance of the concept in each interview. \*\* The same participant could present more than one category

Table II. Steps carried out for analysis of the content of participants' responses.

Steps	Processing of the participants' responses
1	Full transcripts of recorded interviews and codification for identification of each couple
2	Pre-analysis of the collected material
3	Identification of units of analysis for categorization according to each concept of General Systems Theory
4	Saturation finding for each category
5	Discussion of the material analyzed individually and search for a consensus among researchers
6	Validation of the analyzed material among the researchers

equifinality (ability of systems to produce responses to stimuli, that is, equal stimuli can provoke different responses and different stimuli can provoke equal responses) (Bousoo, 2008; Gomes *et al*, 2014) (Table I). Then, by consensus, the most significant excerpts were chosen and, later, a third researcher assisted in the refinement and validation of the material (Faria-Schützer *et al.*, 2020) (Table II).

## RESULTS

The transition to parenthood caused an imbalance in the homeostasis between the spouses, as reported by M/P9, initially during the pregnancy of the first child and after the birth of the second child. The positive experience of M/P9 in not using the pacifier with firstborn was replicated with the second child. The attempt to avoid deleterious habits such as "thumb sucking" induced the M/P10 couple to use the pacifier with their second child. To restore homeostasis, P3 sought a provisional balance, even though he was aware of the risks of offering the pacifier. For M2, the introduction of the pacifier was a way to facilitate the transition to the bottle, since breast milk triggered allergy in the child (Table III).

It is observed circularity in P/M9, with the contribution of paternal support to overcome the difficulties with breastfeeding, leading to a greater availability of the mother to offer the breast to the first child and greater autonomy and empowerment in the resolution of demands with the second child. In addition, this category was also present in the use of pacifiers as an alternative to reduce dependence on breast sucking by the baby, by M2, and to calm parents/baby regarding the crying, by the couple M/P3 (Table III).

The report of M/P3 couple on the introduction of the pacifier to solve the baby's mastitis and colic demonstrated the globality, when it highlighted the importance of the elements of the system in the well-being of the members, even if in emergency (Table III).

The non-summativity among the family members occurred in M4 and M5, which, even if they perceived the differences between the children, tended to reproduce the pattern of offering the pacifier or not according to their experience with the first child. Thus, the perception of the individuality of each child did not interfere in the maternal behavior regarding the introduction of the habit. On the other hand, the M9, when reproducing the behavior of not offering the pacifier to the second child, realized that the use of pacifiers could have eased the need for sucking and breast dependence (Table III).

It is observed morphogenesis by the permeability of the family system and its interaction with other systems, including health (couple M/P8), school (M/P8 and M2), marketing (M1/P1), close relatives (M/P4), who contributed to the decision of offering or not the pacifier (Table III).

The equifinality was demonstrated by couples M/P8 and M/P9, which searched for guidance from health professionals to achieve efficiency in breastfeeding and avoid the introduction of artificial nipples (Table III).

The results showed that the offer of pacifiers was related to difficulties in breastfeeding, to overload of multiple maternal functions and to fatigue of the couple in the face of the demands from the new members of the system (children). When the family system was unable to reorganize itself, there was a tendency to offer pacifiers, even with awareness of the risks to the child's health in the long run. Such decision was enhanced by influences from external systems and by the deficient support from the health system.

## DISCUSSION

This study used the content analysis technique (Bardin, 2016), based on the theoretical assumption of the General Theory of Systems, which evaluates

Table III. Significant excerpts from the participants' speeches, according to categories/concepts related to the General Theory of Systems.

Categories/concepts	Significant excerpts from the participants' speeches
	<p><b>Birth of a child-transition to parenthood: timing of childbirth</b></p> <p> Couple M / P9  M9 - "Childbirth was difficult. We were on our way to a normal delivery and had to have an emergency caesarean section. And it was a big scare for me and him (...) I didn't know how to deal with it."  P9 - "Both were at risk during delivery. First-time father, alone, no relatives. So, at that moment, I ended up taking it a little further. Then also giving the first bath, changing diapers, taking it to be breastfed."</p> <p><b>Experiences with the birth of the second child: maintenance or recovery of stability</b></p> <p> Couple M / P9  P9 - "We had a good experience with F1, and we ended up replicating with F2. We ended up choosing not to use the pacifier."  M9 - "It had worked out with F1 and we would like to replicate this model with F2, of not offering even with so much colic. (...) The first birth was fundamental. I think it gave a basis to the other."   Couple M / P10  P10 - "We were sure that we were going to use the pacifier in F2, because F1 took the finger. We had already arranged that since pregnancy. Do not take the finger! Go take the pacifier! So much so that we went to the maternity hospital with the pacifier."  M10 - "We had decided."</p>
<b>Homeostasis</b>	<p><b>Temporary stability and cost-effectiveness</b></p> <p> Couple M / P3  P3 - "Making an analogy with medicine, we know that it has benefit and a side effect. There you put on the scales, at least momentarily, not thinking about the future. But it seems that the benefit is still greater (...). But we know it has the side effect."  M3 - "We are aware."  Mother: 2  M2 - "It is that thing of necessary evil that everyone talks about. It's bad, but it brings a benefit, it brings a relief (...). It's the cost-benefit thing, right, in the relationship. It's bringing me this benefit, but what will be the consequence going forward. So, she has the dental arch, already we notice the pacifier, the teeth open wide in the front, right. We realize that it did have consequences."  <p><b>Search for the restoration of homeostasis in the face of a disease</b></p> <p> Mother: 2  M2 - "She had cow's milk protein allergy. And I had to stop breastfeeding her at 3 months with an abs and headache because I had no way, either I would stop, or she would not get out of the crisis. (...) And then I arrived with her at the pediatrician in full crisis, the pediatrician said: "Look I'll be very honest with you, you should stop breastfeeding". Because I had already been on a restrictive diet even for dairy traces diet for 15 days. (...) her body identifies a trace in my milk. I had lost a lot of weight and she also did not gain weight. (...) And then when I stopped breastfeeding, then the pacifier helped even more because I had no way. I could no longer give that cozy/feeding for her, for her to stay there on my chest."</p> </p>
<i>Continues</i>	<p><b>Parent - parent relationship-parent encouragement in breastfeeding</b></p> <p> Couple M / P9  P9 - "then at that moment I said: "Wait, someone has to face this, right". So, I tried to be a little calmer: "what do I need to do?"."  M9 - "He went to get a nurse and took her home. She stayed there one afternoon, taught me how to breastfeed. Then he (father) helped make the maneuvers here to get milk. So, I had all this logistical support that was key. Because if you don't have logistical support, emotional support, things go awry. This support also influenced later with F2. Because as I saw that I was capable I thought: "I am also capable of another, because he gave me an initial support."  <p><b>Use of the pacifier as an alternative to the dependence of the baby/mother relationship.</b></p> <p> Mother: M2  M2 - "F1 wanted to be breastfed a lot and that left me exhausted. So, when you have a newborn baby, he wants to hang on you day and night, he sleeps sucking. Depending on your availability, if you have someone to do things in your home, make a meal, help you with cleaning or laundry, that's fine. You stay all day with the child on your lap breastfeeding. But when you have to do everything, you have to make food, you have to take care of the house, you have to work, you have to do so much! If you have a thing (pacifier) that brings you relief, why not use it? That was the thought I need."  M3 - P3 left to work, and I was sitting on the couch all day and F0 stuck to my chest.  Mother: M5  M5 - "It was his way for both one (F1) and the other (F2). I think the pacifier and the blanket take away that question of the other's neediness. That's my vision. I think that from the moment the child does not have the pacifier, does not have a comfort blanket, they become very needy of the other person. (...) And when they have the blanket, they don't have that need of the other. And so, she herself can sort herself out. So, I don't know if because F1 has always had his little blanket, his little pacifier."  M5 - "That's why I talk like that. Me for myself. The pacifier was so good because I needed it so much, she's my biggest partner. (...) Because we felt that he really used me, he was very dependent on me."  <p> Couple: M / P6  M6 - "for the F2 we did not offer pacifier, but he had a very large suction need. Then he wanted to be breastfed a lot, stayed a long time in the chest. Today if I needed, if I had a child with such a need for suction, today I would offer the pacifier."  P6 - "Today in the future if we had another child, a 3rd, maybe even to reassure, maybe to help in the dynamics of the house, we would give the pacifier."  <p> Couple M / P10  P10 - "At that time, the child did not want to be breastfed. Just to suck." "then let's try the pacifier."  M10 - "she slept on my chest. Well, am I going to keep her all day in my chest?" I said, "No. I will intersperse with the pacifier."  P10 - "She stayed there very much (by the chest)."  M10 - "It's to get her out of the chest. (...) It is a soothing strategy (the pacifier). Instead of sticking to my chest. She was going to stick to the pacifier. I was going to be traded for a pacifier. (...) I thought it would relieve me a little, instead of breastfeeding."</p> </p></p></p>

Categories/concepts	Significant excerpts from the participants' speeches
<p><b>Crying/answering relations and pacifier use to soothe baby/parents</b>                      Couple M / P3                      M3 - "When F1 was born, it cried a lot. So, I think there already in the maternity hospital that we offered the pacifier for the 1st time, because I could not stand it anymore."                      P3 - "Because of the crying."</p>	<p>Mother: M8:                      M8-you end up doing what is most beneficial to you, which is to use. I think using, giving the pacifier to the child is easier, you understand? Because it relieves mom a lot, I think so, at least. It is a question of the time of crying, of calming the child, you know? I don't think there's that much tension from mom and dad.</p>
<p><b>Concern for the well-being of the system members lead to emergency conduct</b></p>	<p>Couple M / P9:                      M9 - "Masstris made breastfeeding difficult, but the pacifier was considered at these very critical moments with F2 having colics."                      P9 - "Masstris was worrying for M9. Now the question of F2, he had a lot of colics. So, it was one, I don't even know if you can classify it as such, but a despair. But it was a feeling of "Hell, if we give the pacifier to him at that moment will he improve, will it relieve his colic pains?"</p>
<p><b>Globality</b></p>	<p>Couple M / P10                      M10- She (F2) did not stay all the time on the chest. She was satisfied, she left. The problem is, I didn't want to give in pain.                      P10- There was blood, cracks.                      M10 - when I saw her, I saw pain. So, I was like, "Let's trick her with the pacifier." So much so that I remember the first visit to the pediatrician. She was screaming a lot and I didn't want to give her my breast. I gave the pacifier. Sometimes she even grabbed, you know.</p>
<p><b>Peculiarities of the behavior of each child and the decision to offer the pacifier:</b></p>	<p>Mothers: M4, M5, M6, M9 and M10:                      M4 - "the experience with F1 of not using the pacifier helped to make a decision, to act with F2. But of course, it you do not carry that much over. You learn everything all over again. Because he's another little being. So, you have to learn how it is that this new being works."                      M5 - "F2 suckled every two hours, screamed, cried. F2 is a very tense and nervous child, the opposite of F1. F1 suckled every 3 hours, he was very quiet. Hell, sit there very quietly. (...) For F2, nothing was enough, there was nothing in this world that reassured him. After two hours of breastfeeding, he was already screaming. I came to think, "it is my milk that does not nurture!". And we felt that this decreased from the moment F2 took the pacifier."                      M6- "We saw another prejudice with pacifier use, mainly to offer it to F1. And when F1 was born we did not even acquire the pacifier (...). Today I already have a different understanding that it can be an accessory that can help when the baby has a very large suction need. For the F2 we did not offer, but he had a very large suction need. Then he wanted to be breastfed a lot, stayed a long time in the chest. Today, if I needed, if I had a child with such a need for suction, today I would offer the pacifier."</p>
<p><b>N on-summativity</b></p>	<p>M9: I have been understanding the process that each child is in a way (...). So, it is very personal the experience of each one of testing and finding out what it is that meets some need and not necessarily stick a thing in the mouth of the child to see if she stops crying (...). We decided to follow without then, as it had worked out with F1 and that we would like to replicate this model with F2, not to offer (the pacifier) even with so much colic.                      M10 - As we had our first and tried the pacifier and it did not work because she took the finger, we thought: "now it will be different. Now F2 will take the pacifier, one way or another". All right, we went to the maternity ward. I already had the pacifier, didn't I? F1 was born and stayed 2 days without eating. F2 was already born screaming because it was starving. Then I gave her my breast. When she finished sucking, we offered her the pacifier.</p>
<p><b>Conitnuus / Continuation</b></p>	<p><b>Divergent guidelines among health professionals</b>                      Mother: M3:                      M3 - We took him to the dentist. The first dentist said "take off the nursing bottle, take off the pacifier." Because he also still uses the nursing bottle. Then we went to hear a second opinion because of his little tooth. The other one was more understanding: "Easy, he is still 2 years old."</p>
<p><b>Morphogenesis</b></p>	<p>Couple M / P8:                      M8 - "When F0 was born, I asked the dentist about the pacifier, but you see that they have different opinions, some say yes, and others say no. It is more up to us to really see what each one answered and decide. (...) It's not that her recommended use, but said he had no problem until he was two years old. He did not advise us against it."                      P8 - "He put a limit."                      M8 - "Then, another dentist was as erasive: "No way you should use a pacifier, no way". (...) I think because of this information conflict, you end up doing what is most beneficial to you, which is to use."  <b>Influence of the internet</b>                      Couple M / P4                      M4- "I did the maternity course when I was pregnant from F1. So, I found it unnecessary to do it again. It is much easier from the internet, more so now than before. We go to prenatal clinic, read a bit, follow the monthly reading on specialized websites".                      P4 - "We went to get information and saw the month of the child's development."</p>
<p><b>Conitnuus / Continuation</b></p>	<p>Couple: M / P8                      P8-also participate in Internet Forums on issues related to Child Health. So, we are always looking for this information. And we bought and were gifted a lot of books.                      M8 - We got books as gifts during pregnancy. And then we always sought more information. And in all decisions, we always sought information from different sources. Both in books and in people who were close. I read a lot during gestation about the use of the pacifier.</p>

**Influence of relatives**

Couple: M / P4:

M4 - "For us to give the pacifier is the dream of F2's grandmother. She thinks that little baby with a pacifier in its mouth is beautiful. She thinks it is the most beautiful thing in the world. She said, "Won't you buy a pacifier?" For her it was horrifying that we did not give the pacifier. She bought one of each color, with several different nozzles."

P4 - "For my mother (paternal grandmother) they it was to have a dream come true, she thought a baby with a pacifier would look beautiful."

Couple: M / P7:

P7- Once, your mother gave it to him.

M7- Because he was crying and such. Then she kept insisting. Then I said: "You can offer it, if he does not grab it you do not touch this matter anymore". Because she kept insisting often. Then she put it in his mouth, and he spat it out. From then on, never again. (...) She tried because he cried a lot. Then she said it could calm him down. And I used pacifiers when I was a kid. And because she kept insisting a lot and with that thing, the boy crying. So, she told us she bought one. And then we made this agreement "You may offer it, if he does not want it right then, you will not insist on this matter and we will not touch the subject again after that". That's what happened. He didn't take it, I'm glad. And after that she no longer returned to the subject.

**Influence of the school**

Mother: M2

M2- "I gave the pacifier to F0, when he started going to daycare. The child who gets there without a pacifier, by God it is difficult to adapt! Sometimes the child comes to the daycare, she only breastfeeds, never took a bottle, does not have a pacifier! And she has to stay in a strange place without her mother there for so many hours. And when they have a pacifier it is easier, it gives that little comfort, you know. (...) The teacher of F0 often says: "For God's sake bring a pacifier to this child! "Look, if you want to go to school you have to have the pacifier."

**Morphogenesis**

Mother: M3:

M3- He almost does not use it. It's more when he's too moody. More so. He has already had times in which he goes five days without taking a pacifier when he is not going to school. At school the children use it and then he ends up wanting it too. So, at school he uses it every day.

Couple: M / P5:

P5- At school, he picks up his stuff and goes to sleep.

M5 - It was funny, because in the school he studied she spoke like this: "Oh, that's cute. He is very easy to work with.". Then she said: "Look, he picks up his blanket in his bag, picks up his pacifier, goes for his walk with his blanket, lies down and sleeps". (...) The day he forgot it, the teacher called me and said: "M5 is impossible. He won't be able to sleep. I said, "I'm already bringing the pacifier."

Couple M / P8:

P8 - "And in fact, F0 only began to use the pacifier in the school".

M8 - "The teachers said that it was better that I send the pacifier, because F0 saw the other children in school and wanted it too".

Mother: M6:

M6- The fact that I went to school a lot started to bother me there. And then they said, "evenbody uses a nursing bottle. Give him a bottle. And so on. Try this nozzle." Then I tried several nozzles and the one that worked out the most was the worst of them, the smallest. (...) The school interfered in a subtle way. But today I get it. At the time I did not have this vision, but today I realize that it was yes.: "Oh stop coming here to breastfeed this child. Give him a bottle and get it over with." Got it!

**Influence of marketing**

Father: P1

P1 - "In the drugstore they come up with a smooth talk: "There are adequate pacifiers that do not disturb the dentition". But still, we weren't in favor of the pacifier. In addition to the effects that it can cause in teething, in speech, the pacifier ends up becoming an addiction that the person can not get rid of later until a certain age. That was something we also didn't want."

**Equifinality**

**Differences in the parents' reaction to health professionals' guidelines**

Mother: M5:

M5- He (pediatrician) wanted me to breastfeed him. And F0 was practically 24 hours stuck to me. My breast was broken. I cried as he sucked. And he (pediatrician) did not allow to introduce the formula. There in the maternity hospital, a nurse came to say "He is hungry. Do you want us to feed him?" I said, "I want to." And then she said, "Who is the pediatrician?" and I said the name of the pediatrician. Then she said "No, he does not allow us to give him formula". (...) And then with 1 month he lost 1 and a half kilograms. So, he almost reached a point of malnutrition. Then he said, "No, now we're giving it. The milk is intake week."

Couple: M / P4:

P4 - The doctor only told us to give the supplement, right.

M4- She thought I wasn't producing enough, and he was still hungry. Because he slept very little and demanded all the time. So, the doctor thought there wasn't enough, so we went in with the supplement. That's right, I forgot.

P4- Already from the beginning.

M4 - In the maternity hospital, we thought that later I would produce more. That the only problem was that the colostrum was taking too long. But there were no improvements. (...) And then they thought it wasn't enough. (...) I went to the bathroom to do this (stimulating the message that she did on her chest) and only let off 1 or 2 drops. I saw that I was not ready producing (...), you could see that he was angry, then I would put him on my chest, he continued. Then I gave the supplement and he calmed down.

Couple M / P9:

P9 - "A health professional even said that she would not be able to breastfeed. That it was advisable for us to buy milk, the Nan®, to stock up, because she already had a problem with the nipple".

M9 - "My breast is almost semi-flat so it does not have much nipple. But I was informed that there was no problem, that it was only the handle that had to be correct and such. And all right, everything worked out."

P9 - "It was a struggle in our wish to breastfeed, but still she insisted and succeeded."

M9 - "And I think this was also influenced for not using the pacifier. I had also read that the use of the pacifier can harm breastfeeding. So, I already had so many things that made this process difficult and it was so important for me to breastfeed".

Couple M / P8:

P8- She started taking it, it was empirical that we managed to get her to take the breast. Because we tested it. We began to try it, we tested various positions, various forms and such. Then the form that worked was with her sitting on the thigh. (...) Because no one guided us.

M8: (...) She managed to start taking it when she was sitting. A little baby, sitting on my thigh. Then she managed to take it.

P8 - We used everything they talked about to help her take it, we experimented a lot. Then it worked out by us doing experiments. Carrying out tests, testing. We were almost putting her upside down. We tested everything.

M8 - All positions.

P8- the pediatrician insisted that it had to be the breast.

M8 - In the maternity hospital, everyone insists that it has to be the breast. That the breast is enough. But it wasn't my case, right? And then we did not end up realizing that she was really losing weight. And there at the first appointment, (did not finish the sentence)

P8- Wait a bit. We did realize that she was losing weight.

M8 - We realized it, but we didn't know what to do. We thought it wasn't that bad. Then, at our first appointment with the doctor. She had already lost enough weight. And then he said: "give her the Nan (formula) already."

the relation between family dynamics and a health issue (Galera & Luis, 2002). The studied issue was the offer of pacifiers by parents.

**Category 1-Homeostasis.** The General Theory of Systems applied to the family can be understood by the analogy with a mobile, that is, a change in one element affects all the others. Faced with a change (the arrival of a baby), the family tends to reorganize, seeking stability, adapting to the new demands/changes already expected in family life cycles (Galera & Luis, 2002).

The challenges begin before the birth of the first child, with the anxiety and expectations of this phase, and are enhanced during childbirth, especially when there are changes in the type of planned delivery, for example when normal delivery is replaced by cesarean section. In this case, the post-anesthetic effects of cesarean section and incisional pain may delay the first contact between mother and baby, making the first breast-feedings difficult (Faleiros *et al.*, 2006). Thus, the paternal support, through the initiative to favor the mother-baby contact during breastfeeding, can function as a protective factor for the balance and the stability of the parental subsystem (mother-baby) (Menezes & Lopes, 2007).

Despite the experience acquired with the first child, the arrival of the second one can trigger a new imbalance to the family system (Pereira & Piccinini, 2007). Thus, the offer or not of the pacifier may be tied to the stability model achieved in the previous experience. However, when stability is not satisfactorily achieved with the firstborn, either because the parents had difficulties in dealing with the child without the use of pacifiers or due to the development of the digital sucking habit, the attempt to recover stability with the second child can occur by the anticipation of the pacifier supply.

Homeostasis can also be established provisionally, even to the detriment of the child's future health. Thus, the transposition of this concept to oral health, even with awareness about the risks associated with pacifier use, was compared to the use of a drug, which is momentarily perceived as a benefit, but whose side effect, that is, the consequences of its use, may be harmful to health.

The presence of a threat or disease, such as the installation of an allergic process to the components of breast milk, also led family systems

to seek the restoration of homeostasis by means of negative feedback (Bouso, 2008). This fact would lead to the use of pacifiers as an element to collaborate in rebalancing the system.

**Category 2-Circularity.** Circularity can be verified when both parents complemented each other, with the father performing the function of encouraging and supporting the mother in her difficulties with breastfeeding, thus contributing to the success of the firstborn adaptation process. This mutual cooperation can create beneficial properties for the whole system, reflecting on maternal autonomy, and for the success of adaptation to the arrival of the second child, even in the paternal absence (Bouso, 2008; Gomes *et al.*, 2014).

Another form of circular interaction established in the mother-baby binomial concerns the mother's perception regarding the baby's length of stay in her breast, so that the feedback triggered by this dependence can generate the following circular sequence: the more the mother feels unavailable for the demands related to breastfeeding time, the greater the chance of seeking alternatives, such as the use of pacifiers. In this sense, the use of pacifiers is considered as a "relief" for reducing the baby's dependence and allowing the mother to perform daily domestic activities.

The cycle of the cry-response relation can also be seen as a consistency of circularity. The pacifier can be offered as a way to calm the child, reducing the discomfort of the parents caused by the crying.

**Category 3-Globality.** Specific difficulties, both of mother and child, can lead to emergency conducts, even if they do not help to tackle the origin of the problems. For example, the use of pacifier may not solve mastitis or pains when breastfeeding, as well as it does not treat the cause of the baby's cramps. On the contrary, its use has a great potential for early interruption of breastfeeding, favoring its replacement by formulas (Castilho & Rocha, 2009; Costa *et al.*, 2021), interfering not only in the mother-child relationship, but also in the financial component of the family, by increasing the expenses with the purchase of formulas and utensils for preparation and offering. In addition, the pacifier has the potential to favor structural and functional changes in the stomatognathic system, resulting in the need for corrective treatments (Castilho & Rocha, 2009).

**Category 4-Non-summativity.** The peculiarities of each child's behavior do not seem to be considered for the decision to offer pacifiers, since as observed in this study, mothers tend to repeat the pattern used with the first child, even when distinguishing different behaviors between the first and second one.

Thus, it can be inferred that, seeking a better management of the children's needs, mothers tend to control their behavior, as for example regarding nutritional control with the use of the bottle, by which it is possible to measure the amount of milk offered and ingested by the child (Costa *et al.*, 2021). In this sense, we can consider that the offer of pacifier also reflects a form of control over the breastfeeding behavior, being used as a mechanism to decrease and space the feedings (Lamounier, 2003).

**Category 5-Morphogenesis:** Among the various external systems that interact with the family one, is the health system and its professionals. Regarding oral health, we observe that there is controversy regarding the use of pacifiers, because while some dentists advise against (Sertório & Silva, 2005; Dadalto & Rosa, 2013), others recommend it (Castilho & Rocha, 2009; Dadalto & Rosa, 2013). Such fact can affect the confidence and credibility of the professional, as well as the decision-making process of the marital subsystem, as we observed in the present study.

Close relatives make up another part of the external system (Mauch *et al.*, 2012) and may also influence the decision of offering pacifiers (Galera & Luis, 2002; Mauch *et al.*, 2012), as observed in this study. The health professionals' guidance on the use of pacifiers is important in all groups of the family environment, since there is a wide participation of grandmothers.

Children's schools are another external system with strong influence. It is in this environment that many children can start using the pacifier to assist in the process of adaptation to the new environment, either by school guidance or by initiative of the family. In this sense, preventive actions in oral health for teachers can contribute to avoid the introduction of pacifiers in the school environment.

Furthermore, it is noteworthy that the growing popularity of the Internet has enabled alternatives for access to information, including medical and dental content (Duman, 2020) on social media (e.g.: Youtube®, Google® and Instagram®) (Elkarmi *et al.*,

2017). However, one should consider that the content of some websites may not be reliable, increasing the risk of disseminating incorrect information and negatively influencing family decision (Elkarmi *et al.*, 2017; Duman, 2020).

In addition, the influence of the market system and of advertisements of children products should be considered. Even with the sanitary regulations by the Ordinance GM/MS 2.051/01 on "Marketing of Foods for Infants and Early Childhood Children, Nipples, Pacifiers and Bottles" (Ministério da Saúde *et al.*, 2009), as demonstrated in this study, the influence for the indication of pacifiers/bottles persists in commercial establishments.

**Category 6-Equifinality.** To understand the concept of equifinality of the family system, it is necessary to verify that the changes occurring in the system with the arrival of the baby aim at its well-being and, mainly, its survival (Costa *et al.*, 2021). However, difficulties such as breast pain or insecurity regarding milk quantity/quality (Rocha *et al.*, 2018), may influence breastfeeding. In this sense, it is important for health professionals to know the dynamics of the family system, seeking to verify the causes that interfere in the good performance of breastfeeding (Rocha *et al.*, 2018).

Thus, it is suggested that the support offered by health professionals should be based on personalized follow-up, considering the specific difficulties of each subsystem (mother-child) (Rocha *et al.*, 2018). In counterpoint, when there is no specificity in the analysis and resolution of the problem, the reaction of each family system may be variable, including as a final state the decision to introducing bottles/pacifiers, stimulating the installation of deleterious habits in childhood.

## CONCLUSION

The offer of the pacifier met the emergency needs of the baby, and the mothers were responsible for the final decision, even when recognizing the consequences of its use on the child's health in the long term.

The General Theory of Systems allowed us to verify that the offer of pacifier was related to the behavior of the marital subsystem in reorganizing itself with the demands of the baby and with problems with



breastfeeding. The use of pacifiers was also influenced by the external system (school, kinship, marketing and social media), as well as by contradictory orientations from the health system. In this sense, the General Systems Theory can be used to better understand the dynamics and specific needs of the family system. Thus, health professionals can apply this theory to understand the dynamics of deleterious habits in childhood, in order to plan care and guidance to families in a personalized way, seeking to meet the peculiarities of each family system.

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**COSTA, A. D.; COSTA, E. D. & POSSOBON, R. F.** Hábito del chupete: estudio de la dinámica familiar desde la perspectiva de la teoría general de sistemas. *Int. J. Odontostomat.*, 16(3):447-456, 2022.

**RESUMEN:** Este estudio tuvo como objetivo conocer la percepción del subsistema conyugal (padres) y comprender la dinámica del sistema familiar en la oferta de chupetes. Se entrevistó a diez parejas, padres de niños entre 4 y 7 años, mediante un guión semiestructurado de preguntas sobre la oferta de chupetes para sus hijos. Respuestas por método cualitativo de análisis de contenido, utilizando categorías predefinidas de la Teoría General de Sistemas (homeostasis, circularidad, globalidad, no sumatividad, morfogénesis y equifinalidad). La oferta de chupete restableció la Homeostasis relacionada con la adaptación de la madre en el puerperio; en la introducción de pezones artificiales por alergia a la leche materna y para evitar chuparse el dedo. Ocurrió circularidad en el apoyo paterno para estimular el amamantamiento y en la oferta del chupete para reducir la dependencia del bebé con respecto a la madre. La globalidad ocurrió cuando la oferta del chupete suavizó la mastitis y el cólico del bebé. La no somnolencia se evidenció en la actitud de la madre en el control de la conducta de los niños con oferta de chupete. Predominó la morfogénesis en la influencia de los sistemas externos (salud, escuela, parentesco, marketing y redes sociales) en la decisión familiar de ofrecer chupetes. La oferta de chupetes interfirió en la Equifinalidad, favoreciendo la organización del sistema familiar frente a las complicaciones en la lactancia. La oferta del chupete buscó atender las necesidades de emergencia del bebé, aunque hubo una percepción de consecuencias para la salud del niño a largo plazo. La Teoría General de Sistemas permitió verificar la dinámica del sistema familiar, que puede ser aplicada por los profesionales de la salud para comprender los factores involucrados en la oferta de chupetes.

**PALABRAS CLAVE:** chupete, familia; teoría de sistemas.

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Corresponding author:  
Eliana Dantas Costa  
Department of Community Dentistry  
Piracicaba Dental School  
University of Campinas  
Avenida Limeira número 901  
Bairro Areião, Piracicaba – SP  
Zip Code 13414-903.  
BRAZIL

Email: [edantasc@yahoo.com.br](mailto:edantasc@yahoo.com.br)