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ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE,
AND PRACTICE

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CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

SUMMARY OF CONCLUSIONS

The following is a list of answers to the ten questions asked by PRITECH at the beginning of the study of Mexican mothers' knowledge, attitudes and perceptions of oral rehydration salts.

1. What are the most common methods Mexican mothers use to treat their children's diarrhea?

- When the first signs of diarrhea appear, mothers use home remedies to control it and avoid dehydration.
- The most commonly used remedies are rice water, *atole* (flavored cornstarch custard), commercial oral rehydration salts (ORS), and copious amounts of liquids.
- Mothers suspend milk but not solids; they do however avoid heavy foods.
- They administer drugs before seeking medical assistance, particularly drugs they have been prescribed before (e.g. Kaopectate, Kaomycin, Pepto Bismol, Melox).
- If these first measures have no effect, they seek medical assistance.

2. What do mothers know about oral rehydration therapy in the treatment of diarrhea?

- Mothers know that dehydration is the most dangerous consequence of diarrhea and that it can be fatal.
- They understand the need to replace fluids to avoid dehydration; apple soda, camomile tea, boiled water, home remedies or prepared ORS are used.
- All mothers are familiar with prepared, bottled ORS (Pedialyte). They know its main function is to replace fluids lost through diarrhea, vomiting or excessive sweating; they also know that this solution does not combat diarrhea.
- The ORS with which they are familiar are Pedialyte and Vida Suero Oral.

3. What myths are there regarding oral rehydration therapy?

- Mothers know that oral rehydration salts contain sugar and salts, but they also think they have other substances such as potassium, iron, phosphorus, minerals, electrolytes, and (occasionally) vitamins.
- They believe ORS are not drugs and therefore cannot be harmful; as a result, they believe that any amount may be freely given.
- Since Pedialyte comes in a variety of flavors and some doctors recommend diluting it with water or sodas, they associate it with soft drinks.

4. How do mothers see the use of oral serum in treating diarrhea?

- Regardless of their place of residence or social class, mothers accept the use of oral solution.

5. What obstacles are there to the use of oral rehydration salts?

- The main obstacle to using ORS in treating diarrhea is its unpleasant, saline taste.
- Vida Suero Oral tastes saltier than Pedialyte, and this is an obstacle to its use.
- Vida Suero Oral is not practical: it takes time to prepare and there is a risk of compromised hygiene; also, it is necessary to wait for the solution to cool.
- Mistrust of government health services is an obstacle to the use of Vida Suero Oral. This mistrust is reinforced by the fact that Vida Suero Oral is distributed free of charge, causing mothers to doubt its quality.

6. What presentation of oral rehydration salts do mothers prefer, and why?

- Mothers prefer prepared, bottled ORS preparations such as Pedialyte because they are more convenient and offer guaranteed hygiene.

7. What motivates mothers to prefer oral rehydration salts in treating their children's diarrhea?

- They prefer ORS because of its effectiveness and because they know ORS prevents or cures dehydration. The secondary motivations mothers could have for selecting a new serum would be a pleasant taste, a bottled presentation attractive to children, the convenience of an easy-to-remove cap, and a bottle size to suit their needs (between 250 and 500 ml).

8. Where and how do mothers prefer to obtain oral rehydration salts or other products to treat their children's diarrhea?

- Mothers want to be able to buy ORS near their homes, in retail outlets such as drugstores or supermarkets.

9. Where do mothers get their information on treating diarrhea?

- They learn home remedies from their mothers-in-law, grandmothers, mothers and friends; they learn about drugs from their doctors when they seek medical assistance.

10. What price range is seen as "appropriate to high" for treating diarrhea?

- At present mothers spend from MEX \$30,000 to \$50,000 (USD \$10 to \$16) on comprehensive treatment of an outbreak of diarrhea. They are willing to pay between \$4,000 and \$6,000 (\$1.20 - \$1.60) for a bottle of prepared ORS.

11. NEW ORS PRODUCT

For mothers to buy it, a new ORS product must be attractive in terms of price, presentation and performance. The following list indicates the features the product should offer.

PROPERTIES

- Effectiveness
- Better taste than existing ORS products
- Unflavored for infants and for mothers who prefer natural, chemical-free products
- Attractive flavors and colors for toddlers

PRESENTATION

- Plastic bottles, containing 500 and 250 ml
- Bottle suitable for storing other liquids
- Safe, reliable, easy-to-open cap

DESIGN

- Attractive container
- Label giving the impression that the product is a drug
- Label with eye-catching, cheerful colors
- Label with images depicting the concepts of life, energy, health and water

INSTRUCTIONS

- Instructions, administration method and recommended dose clearly specified
- Explanation of the dangers of excessive consumption

PRICE

- List price between MEX \$4,000 and \$5,000 for a 500 ml bottle

**ORAL REHYDRATION SALTS AND THERAPY
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CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

I. INTRODUCTION

In order to investigate the knowledge, attitude and practices regarding the use of oral rehydration salts (ORS) to treat diarrhea among children, PRITECH asked Joan Brodovsky Consultores, S.C., to effect a qualitative study among Mexican mothers. The aim was to define the perceptions of lower-middle and working (lower economic) class mothers. The results will be used to formulate strategies to promote the use of oral rehydration salts.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

II. METHODOLOGY

The study was effected by means of focus group sessions with mothers of young children. Each group was moderated by Rosalinda Domínguez, following the attached subject guide previously prepared in collaboration with personnel from PRITECH. The participants were required to have at least one child under the age of seven who had suffered from diarrhea on at least one occasion.

Mothers from the lower-middle (C/D) and working (D/E) classes were chosen. In order to have two geographical perspectives, sessions were held in Mexico City and in Villahermosa in the state of Tabasco. A total of eight focus groups were held. The sample was made up as follows:

GROUP	CITY	SOCIO-ECONOMIC LEVEL	MEMBERS
1	Mexico City (North)	Low-middle	10
2	Mexico City (South)	Low-middle	10
3	Mexico City (North)	Working	10
4	Mexico City (South)	Working	10
5	Villahermosa	Low-middle	8
6	Villahermosa	Low-middle	7
7	Villahermosa	Working	6
8	Villahermosa	Working	5

The initial plans were for seven group sessions: four in Mexico City and three in Villahermosa. Since the first working class (D/E) Villahermosa group was affected by continual interruptions and outside interference, we decided to organize another session in order to complete the information obtained thus far; thus the last group had only five members. Nevertheless, the results of eight independent sessions are presented.

In the sessions we first obtained information on knowledge, habits and attitudes towards diarrhea and ORS. Later, the participants were shown a bottle of (unflavored) Pedialyte and a sachet of Vida Suero Oral in order to evaluate these products' impact on them. Finally, they were presented with five posters bearing texts provided by PRITECH. The posters were presented in a different order at each session to avoid bias in the preferences shown towards the individual texts.

Each focus group was held in a house corresponding to the area and socio-economic level in question. At the two sessions in the north of Mexico City, the house was equipped with a Gesell chamber. All the sessions were recorded on audio tape. At the end of each session, the participants received a gift to thank them for attending.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

III. DIARRHEA**A. IMPORTANCE TO MOTHERS**

The most common causes of sickness among children under the age of 5 are gastrointestinal and respiratory ailments. Thus, the ailments mentioned by the mothers were diarrhea, intestinal infections, throat infections, angina, bronchitis, coughs and colds.

In their opinion, diarrhea is the most serious and dangerous because of the consequences it can have among small children. They believe that diarrhea is a specific illness and should be treated like any other. They refer to it as "diarrhea", "the runs", "a stomach infection" or, on occasions, "*empacho*" (food stuck in stomach). See Table 1.

B. KINDS OF DIARRHEA

The participants identified and made distinctions among different kinds of diarrhea. These distinctions were based on excrement color, smell and consistency, the frequency of evacuations, and the overall duration of the outbreak.

The most common kinds of diarrhea are those caused by teething, intestinal infections, and a food disagreeing with the stomach. The more serious—but less frequent—kinds are caused by parasites, amoebas, dysentery, and salmonella.

1. Teething

When diarrhea is caused by teething, the excrement is described as "liquid" and the child only suffers gum discomfort; his appetite does not change.

2. Intestinal infections

Intestinal infections cause diarrhea along with vomiting and (possibly) a high temperature.

"When he has a temperature, it means there's a stronger infection, it means there are complications." (Middle class, Villahermosa)

"When it's an infection, he gets a temperature; that's how you know it's an infection." (Working class, Villahermosa)

With an intestinal infection, the excrement has a "strong" smell and a "liquid" or "slimy" consistency.

"Intestinal infections often do cause diarrhea, and sometimes it can be very bad." (Middle class, Villahermosa)

"When my daughter has an intestinal infection, it comes out liquid and with a very strong smell." (Working class, Villahermosa)

"When it's an infection, it smells strong, it's slimy, and it has lumps of milk in it." (Working class, Mexico City)

The "lumps of milk" refer to the condition of *enlechado* (having drunk too much milk) described by working-class mothers in Mexico City.

3. Food disagreeing with stomach

Diarrhea caused by a food that disagrees with the child's stomach is milder than other kinds, evacuations are less frequent, and the outbreak clears up in one or two days.

"When it's not an infection it's different because it doesn't smell as bad and it's not so liquid." (Working class, Villahermosa)

"When diarrhea is caused by something disagreeing with the stomach, there's vomit, there's the smell of children's evacuations, and there's nausea."

"When something they eat disagrees with them, their evacuations aren't so frequent; it's temporary." (Middle class, Villahermosa)

4. Amoebas and parasites

Mothers in Villahermosa consider diarrhea caused by amoebas and parasites to be serious because it contains traces of blood, evacuations are frequent, and the outbreak can last for more than one day.

"When it's parasites, they evacuate very frequently and it smells very bad." (Middle class, Villahermosa)

"With parasites, it can last two or three days." (Middle class, Villahermosa)

"When it's caused by amoebas, sometimes it contains blood and phlegm." (Middle class, Villahermosa)

5. Dysentery and salmonella

Dysentery also causes a kind of diarrhea with traces of blood.

"With dysentery, it has flecks of blood because of the parasites or the amoebas." (Working class, Villahermosa)

Salmonella is identified by color: "Green means salmonella." (Middle class, Mexico City)

C. CAUSES

Mothers identify the different kinds of diarrhea in terms of their causes. When specifically asked about the cause of the affliction, however, they did give additional information.

1. Teething

The reasons why their children get diarrhea are clear (Table 2). One of these is teething. When a child is cutting teeth, they explain, he swallows more saliva and it disagrees with his stomach, or the irritation in his gums makes him want to put everything into his mouth. Putting things in their mouths causes the ailment, and this occurs very frequently in children aged eight to nine months who like to pick everything up off the floor and put it in their mouths.

2. Disagreement

Another common cause of diarrhea among children is when food "disagrees with their stomach" or is too "heavy". It happens most often when they begin to eat solid food, when they are still not yet used to it.

"Baby food doesn't agree with them before they're weaned."

"When you first give them food, you don't know whether it's going to agree or disagree with them."

3. Change of milk

Mothers often state that changing their children's milk causes diarrhea.

"Because I changed his milk. I gave him normal milk and no one said I had to treat it, and no milk agrees with him."

4. Micro-organisms

Parasites, bacteria and amoebas also cause diarrhea; however, mothers do not explain how their children get infected by them.

"Here in Villahermosa, they get diarrhea more often during the summer, because the parasites breed with the heat."

"Throat infections", which then move on to the child's stomach, are another of the causes mentioned by the mothers.

5. Food spoiling

Mothers in both areas (Mexico City and Villahermosa) mentioned food that "had spoiled in the heat" as being a common cause of diarrhea.

"During the hot season diarrhea is very common, because things spoil."

6. Susceptibility

A "child's organism" is another of the causes mothers identify. In their opinion, even when they take great pains over hygiene and supervising their youngsters, the children inevitably fall ill because their organism is delicate.

"I've seen children that are well cared for, and even so they suffer from stomach complaints."

7. Lack of hygiene

For some mothers, pacifiers are an important cause of diarrhea; some family doctors have even forbidden them to let their children use one.

"I think it's worse when they have a pacifier."

"My boy gets the runs very often, but because he uses a pacifier he picks up all kinds of infections. The doctor told me not to let him use it."

Inadequate food hygiene and insufficient boiling times are errors that make mothers feel guilty; as a result, they refer to "mothers" in the third person:

"Mothers give their children food, such as fruit, without washing it and that causes diarrhea."

"Eating with dirty hands" is another cause, although not one of the most frequently mentioned. Likewise, "eating food off the streets", particularly "junk food", is another reason that mothers offer for diarrhea.

8. Too much food

Older children, when able to feed themselves, often eat too much and as a result get diarrhea.

D. AGE

The group session participants explained that children suffer from diarrhea at different stages of development, linked to the inherent characteristics of each (Table 3).

1. Under one year

The first stage during which it is common for the child to suffer from diarrhea takes place before the first birthday. The child begins to teethe, his gums are irritated, and he puts everything he can into his mouth. Diarrhea is also caused by changes in milk taking place during this period.

"In the space of one year he was sick twice: the first time, as a newborn, because of the milk, and then when he was three months old when the milk he got from Social Security was unavailable and they gave him soya milk."

Some mothers believe that if their children are not breast-fed, they do not create defenses against bacteria and are more susceptible to illnesses such as diarrhea. Also, if they do not breast-feed, they have to give their children other milks which may disagree with them.

"I would say the period from birth to one year, because I didn't breast-feed my daughter, and I had to try to find out which sort of milk she liked, and she got ill."

"I think it's those of us who bottle-feed, because I think children get sick less if they are breast-fed."

2. Around one year

The second stage during which diarrhea is common takes place around the age of one year. At this age, children are crawling and putting everything they find on the floor in their mouths.

"Between 12 and 18 months, when they pick anything up to put it in their mouths because they don't understand the risks."

Teething, around the age of one year, also causes diarrhea.

"And then when they begin to teethe, because they get irritated; they begin to teethe between the fifth or sixth month and the first birthday."

3. From one to three years

The third stage when diarrhea is common covers the period "from one to three years", when the children are beginning to walk and pick everything up off the floor and put their dirty hands or the objects they find in their mouths. In addition, around this time they are first given solid food which does not always agree with them.

"Under the age of two and when you begin to feed them, because you don't know whether the food's going to agree with them or not."

E. CONSEQUENCES - DEHYDRATION

Mothers from both socio-economic classes in both cities are readily able to identify dehydration as the main serious consequence of diarrhea. As a result, diarrhea is seen as a serious illness, requiring special care. Mothers understand that it can lead to the child's death if it is not treated quickly (Table 4).

"The body contains more than 50% water, and when a child loses water he dehydrates, and dehydration can lead to other consequences such as death." (Middle class, Villahermosa)

"When they lose a lot of water they can die." (Middle class, Villahermosa)

"The body uses up all its fluids. They can die from dehydration." (Middle class, Mexico City)

"A lot of diarrhea can lead to dehydration and even death." (Working class, Mexico City)

1. Symptoms

The signs indicating dehydration are weight loss caused by diarrhea, a sunken crown, and baggy eyes.

"It leaves them very dehydrated, they lose weight. Even though you give them fluids, they are left rickety just by the diarrhea."

"Their crowns sink in when they're dehydrated or when they need water." (Middle class, Mexico City)

In addition to these symptoms, the participants mentioned "lack of appetite", "nervousness", and "emotional depression" caused by their children's dehydration.

"Their mood becomes nervous when they're dehydrated; they become weak and cry a lot." (Middle class, Mexico City)

2. Conceptualization

a) Vomiting

Mothers understand that diarrhea causes dehydration. Only in the middle-class group in Mexico City was it mentioned that diarrhea alone does not cause dehydration if it is not accompanied by vomiting.

"When they dehydrate, it's because of vomiting together with the diarrhea. Just diarrhea alone rarely leads to dehydration."

Nevertheless, they did recognize that a child can dehydrate if diarrhea is not treated appropriately, even without vomiting.

Middle-class mothers in Villahermosa also believed that vomiting increases the risks.

"Diarrhea and vomiting together, that's much worse. Dehydration can occur in less than an hour."

b) Serious cases

The second middle-class group in Mexico City said that dehydration only occurs in serious cases.

"I think it happens only in serious cases, because when it only lasts a day or two, with proper care and hygiene, there's no dehydration."

c) Fever

Working-class mothers in Mexico City associate fever with dehydration.

"When they get a fever, they begin to dehydrate."

d) Heat

The Villahermosa mothers in particular identified "heat" as a cause of dehydration. Due to the climate of their region, heat is of greater importance to them than it is to mothers in Mexico City.

"Also, with the climate here and the heat, they perspire, they have diarrhea and they vomit, that's when it's all too much." (Middle class, Villahermosa)

"People around here are really scared about diarrhea." (Middle class, Villahermosa)

"If a child goes five or six times in less than 24 hours, it can be fatal because of the atmosphere and climate we have here." (Middle class, Villahermosa)

e) Etiology

Mothers define dehydration as "loss of water" or "loss of liquids"; middle-class mothers in Villahermosa also include the loss of other substances.

"They lose minerals and electrolytes, either by vomiting or through diarrhea."

The loss of all these substances —water, electrolytes and minerals— provokes "decompensations" and convulsions in the child.

"Then the decompensations begin, and then the convulsions; dehydration leads to more serious things and then they die."

So, death is the result of "decompensations" (Table 5).

F. BELIEFS

1. *Empacho*

During the sessions a series of beliefs regarding diarrhea came to the surface. Most notable is the phenomenon of *empacho*; it was mentioned most frequently by working-class groups in Mexico City, and to a lesser extent by one middle-class group in Mexico City and one in Villahermosa. *Empacho* was explained in the following terms:

"Something of what they eat gets stuck in their stomach or intestines and that causes an infection."

"Their own saliva. We're supposed to wipe it off because if the child swallows it, his stomach won't work properly."

Empacho can also be caused by saliva disagreeing with the stomach during teething.

Working-class mothers in Mexico City said that doctors refer to what they know as *empacho* as a "stomach infection"; the difference is that the mother cures it with home remedies while the doctor wants to use antibiotics, which do not always agree with the child's stomach.

Linked to the concept of *empacho*, working-class mothers in Mexico City identified *enlechado* as a kind of infant diarrhea caused by drinking excessive amounts of milk.

"*Enlechado* is diarrhea with little balls of milk in it. The ball is white, but around it is green and sort of slimy." (Working class, Mexico City)

Since not all doctors will accept that a child has *empacho*, mothers prefer to take the infant to someone who knows how to "massage out the *empacho*", i.e., to loosen the blockage from the intestine or stomach. Any kind of food, such as pork cracklings, fruit, chewing gum, or even a piece of paper or a button swallowed by the child, can cause *empacho*.

The most common cure for *empacho* is to take the child to be massaged.

"These people massage the child, they cover them with oil and then knead along the entire backbone." (Working class, Mexico City)

"The easiest way is to knead the child's backbone and give him oil. You massage him from the stomach down to the ankle."

In addition to the oil massage, the children are often given a spoonful of any kind of oil, with a cup of herbal tea.

"She gave him a spoonful of olive oil and sodium bicarbonate and a cup of tea, and he stopped vomiting." (Middle class, Villahermosa)

"Have you ever tried to massage out an *empacho*? It's really easy if you give them oil with magnesia to loosen it all and then, at the end, a cup of tea. That cures it." (Working class, Mexico City)

Although mothers sometimes hesitate to knead their child's backbone, imagining it to be painful, they believe in the remedy. Moreover, it is cheaper than going to the doctor and buying medicine for the child (Tables 6 and 7).

"My little boy got sick with diarrhea and vomiting, and so I took him for a massage, they gave him a cup of tea and that was that. I had already spent \$150,000 at the doctor and these people only charged me \$10,000." (Working class, Mexico City)

"I don't like it because I think kneading the backbone must hurt, but it's a very effective cure." (Working class, Mexico City)

2. Mother's milk

Another belief about diarrhea is that children who are not breast-fed are more susceptible to illnesses, because they do not develop defenses against parasites and bacteria (Table 6).

"It's important to breast-feed them so they don't get sick." (Middle class, Mexico City)

"...those of us who bottle-feed. I think children that are breast-fed get sick a lot less."

3. Preventing diarrhea

Working-class mothers in Mexico City believe that giving their children a spoonful of oil once a month will prevent diarrhea (Table 6).

"They recommend a spoonful of oil every month, so the kid can get out all the filth he has inside."

G. DYNAMICS

When a mother detects the first signs of diarrhea, an interplay of dynamics begins among the child's illness, the mother's own feelings, and the steps she takes (Table 9).

1. Symptoms and indications

The following are a mother's first indications that her child may have diarrhea:

- Frequent bowel movements: two or three times a day, smelling stronger than normal
- Movements of a different color and a watery consistency
- High temperature
- Stomach ache
- Nausea
- Loss of appetite
- Pale complexion and/or baggy eyes
- Hands and stomach warm to the touch
- Listlessness; child doesn't want to play

Upon seeing these signs, a mother will begin to feel concerned, especially if the child is too young to talk and cannot explain what he is feeling.

The symptoms which provoke most concern and desperation are a high temperature and vomiting, because they indicate an intestinal infection and not just a simple case of diarrhea. Frequent and liquid bowel movements, together with a loss of appetite, also indicate a more serious outbreak of diarrhea (Table 10).

2. First line treatments

After detecting a possible outbreak, the mother tries to combat it until the feces acquire a more solid consistency. The methods she uses are home remedies learned from her grandmother, mother-in-law, mother, friends, neighbors, and other people with more experience than her (Table 11).

In addition to her home remedies, the mother immediately modifies the child's food and liquids.

a) Home remedies

Mothers prefer to try and cure their children with the home remedies they know, some to avoid giving the child too much medicine. Working-class mothers fear that a doctor will give them a drug that would harm the child's stomach, in addition to charging them for the visit and trying to sell them some form of treatment.

The most common home remedy among all the groups from both cities is **rice water**. **Cornstarch custard** (*atole*) is another remedy used instead of rice and is believed to have the same effect. Mothers have great faith in the effectiveness of these remedies to make evacuations more solid and less frequent.

"With rice *atole* the diarrhea stops completely." (Middle class, Villahermosa)

Nevertheless, some Villahermosa mothers stated that it does not work when the diarrhea is caused by an infection.

Mexico City mothers give their children **guava-flavored tea or water**, or simply the pulp of the fruit, to help stop diarrhea.

"Children get better very quickly with guavas, when it's not an infection. I have a lot of faith in guavas." (Middle class, Mexico City)

"...give them something to stop the diarrhea, like guava leaves or stewed guava, or guava water with papaya. It helps block them up." (Working class, Mexico City)

Some working-class mothers in Mexico City even combine guava leaves with *sanguinaria* in a lemon-flavored infusion to combat an infection.

"I give him guava leaves with *sanguinaria* in lemon tea and I hardly ever go to the doctor. That mixture cures them." (Working class, Mexico City)

Camomile tea (*manzanilla*) is used in both cities to improve fecal consistency, soothe pain, and avoid dehydration. **Water with lemon and salt** is also used to combat dehydration.

Soft drinks —such as Coca-Cola, Sidral (pasteurized apple soda) and Tehuacán (plain mineral water)— are widely used. Coca-Cola on its own or mixed with Tehuacán was said to be used in Mexico City to halt diarrhea. To put an end to "the runs", Coca-Cola with lemon and sodium bicarbonate is used (working class, Mexico City); to avoid dehydration, Coca-Cola is mixed with *atole* (middle class, Mexico City).

Other home remedies include *epazote* tea for parasites and amoebas (working class, Mexico City), garlic boiled in milk for amoebas, and an infusion of orange peel, cumin and cinnamon to control diarrhea. These methods are not in general use.

First steps to avoid dehydration include oral rehydration salts (ORS) —either **Pedialyte** or **Vida Suero Oral**— and **Sidral mixed with Tehuacán**. This home remedy is in common use in both cities, particularly when children refuse to take ORS.

Finally, children are given a spoonful of olive oil when *empacho* is suspected, to loosen the food stuck in the stomach. It is often administered monthly as a preventive measure against diarrhea.

b) Changes in food

One of the first steps taken by mothers when they detect diarrhea is to eliminate milk from the child's diet. They believe that milk only makes the problem worse.

"You mustn't give them milk, because milk only loosens their stomachs even more." (Working class, Mexico City)

Some mothers dilute milk to half concentration or give their children a substitute such as Prosobee or Casec. Mothers do not refrain from feeding their children when diarrhea is detected, but they do suspend "heavy" foods such as eggs, beans, fats and irritants.

Only one participant said she suspended all food when her child had diarrhea; she informed us that she took this step only when the child had both diarrhea and vomiting, because her doctor had told her that the child was unable to hold anything down. Nevertheless, the other group members informed her that even if the child was vomiting, something would stay in his stomach.

Mothers give their children very light food when they have diarrhea: chicken, chicken soup, vegetables, purees, toast, ham, gelatin, rice or wheat gruel, and stewed fruit such as apples, guavas and pears (Table 12).

c) Mothers understand the importance of giving their children copious amounts of liquid at the first sign of diarrhea. Those from Villahermosa also give more fluids when their children perspire more than is normal (Table 13).

"When a child gets diarrhea, first you must give him lots of liquids." (Middle class, Mexico City)

"When he has a cold or he's sweating more than normal, I buy him some Pedialyte." (Working class, Villahermosa)

Mothers from all groups spoke of "serum" (ORS) as an important liquid in fighting dehydration. However, the custom is much stronger in Villahermosa than in Mexico City.

"When I see he's got the runs, the first thing I do is give him serum." (Working class, Villahermosa)

The group which emphasized the importance of ORS the least was one of the working class groups from Mexico City. Its members knew of a wide range of home remedies and preferred them over ORS.

In Villahermosa it is a common practice to combine ORS with a soft drink of some kind, to enable the child to drink it more easily. In addition to ORS, mothers give apple juice or apple soda, camomile tea, or boiled water to replace lost fluids, or instead of the ORS they use Sidral mixed with Tehuacán or boiled water with lemon and salt.

"You must always give them liquids: preferably serum, but if that's not possible you can give them any other liquid, such as juice, boiled water, or Sidral mixed with Tehuacán. That acts like serum, because of the minerals in the Tehuacán." (Middle class, Mexico City)

"I was told to give him boiled water with salt and lemon, and that it was also like serum." (Middle class, Mexico City)

3. Subsequent measures

As the child's symptoms worsen, his mother feels greater anxiety and fear because she knows that diarrhea is a serious illness and that the child could dehydrate in a matter of hours.

Some of the mothers told us about their experiences with dehydrated or almost dehydrated children. One working class mother from Mexico City lost a daughter because she failed to give her sufficient liquid.

This is when working-class mothers take their children to be massaged to cure *empacho* and to loosen the food stuck in their stomachs or intestines.

a) Self-medication

When the child has three or four bowel movements a day, is generally listless and only wants to sleep, complains about stomach aches and begins to develop a fever, a mother will give him some form of medication in addition to the home remedies. Mothers believe that such medicines are very gentle and, instead of harming their children, will help them. Some administer these drugs while waiting to see doctor, whereas others give them with the firm intention of curing their children without medical assistance.

"For diarrhea, I give him the same suspension as always, and then I call the doctor." (Middle class, Villahermosa)

"If they are very sick, or if they don't get better, I give them Terramicina, three times a day, and then they improve. I don't need doctors." (Working class, Mexico City)

The attitude that they can do without medical assistance because their home remedies are very effective and because they know what drugs are necessary is common among working-class mothers in Mexico City. They do recognize that it would be difficult to cure an infection with these remedies, however; in such a case, the child must be taken to a doctor.

"When it's just normal diarrhea, there's no urgency to go and see the doctor; that's necessary only when the diarrhea doesn't clear up with what you know."

"When it's an infection, you can tell by the excrement and the very next day you go and see a doctor." (Working class, Mexico City)

Mothers state that they use drugs that the doctor has prescribed previously in similar situations, but they do not feel they have the authority to suggest medication to others, since they know diarrhea can be caused by a series of factors.

"It's very difficult for someone to say 'give him this drug' because there are different reasons for diarrhea; therefore you shouldn't self-medicate." (Middle class, Mexico City)

However, their comments show that, at least with regard to drugs they consider inoffensive, they do self-medicate and recommend courses of medication to others.

"With your first child you go running to the doctor for anything, but later on you say to yourself 'why go to the doctor if I know what he's going to say?' And then you can cure them yourself because by then you've learned how." (Working class, Mexico City)

Suspensions such as Kaopectate or Kaomycin are the drugs mothers most frequently give to their children without consulting a doctor.

"I give him Kaopectate; it contains no antibiotics, it controls the diarrhea, and it doesn't harm him." (Middle class, Mexico City)

Pepto-Bismol and Melox are two other freely administered suspensions.

When the child has a fever, some mothers prefer not to wait to see a doctor and administer Temptra or acetylsalicylic acid to reduce his temperature.

Some mothers give their children antibiotics, such as Terramacina, referred to above.

"And if it doesn't stop, I give them Penprocilina; it works with infections as well."

"When my little boy got the runs, the doctor prescribed Bactrim; three months later he got them again and I gave him Bactrim."

Furoxona is another drug used to treat diarrhea, in both Mexico City and Villahermosa.

Some mothers in both cities prefer to refrain from giving their children medicine until they have seen a doctor. This is particularly true in the case of first children or when they are still very young.

"I prefer not to give him drugs because he's very small; just home remedies, like tea." (Middle class, Mexico City)

b) Visits to the doctor

Mothers decide to take their children to the doctor the day the diarrhea starts or, at the very latest, the next day, depending on how serious the symptoms are.

If they are not serious, mothers generally use home remedies and suspensions. If these do not have the desired effect and the symptoms persist, however, they then go to the doctor.

"If it's not too bad, I can control it in a day by changing his food and with what I give him (Kaopectate or Kaomycin)." (Middle class, Mexico City)

"When I've given him all the remedies and everything else I know, it's more worrying and I take him to the doctor." (Middle class, Mexico City)

When the child does not respond to home remedies, the symptoms are not of simple diarrhea, but of an infection that has to be treated with antibiotics.

"When the infection is serious, these remedies don't work and you have to give them antibiotics." (Working class, Villahermosa)

Likewise, diarrhea along with vomiting and a high temperature means an infection that must be treated by a doctor.

"Sometimes they get diarrhea and vomiting together, and that's when you go to the doctor. You don't wait until it is too bad to take him." (Middle class, Mexico City)

"When home cures don't work and instead of getting better he develops a fever, I go running to the doctor." (Middle class, Villahermosa)

Mothers recognize fever as one of the most serious symptoms of diarrhea; some working-class mothers in Mexico City believe that the fever is more serious than the diarrhea itself.

"A fever will affect them a lot. A fever is more serious than diarrhea because a fever will bring convulsions and the child can die of that." (Working class, Mexico City)

The group which seemed slightly more concerned to take their children to the doctor as soon as possible —regardless of whether an infection was suspected or not— was the middle-class group in Villahermosa.

"I take him after the second evacuation. In other words, the second time it comes out watery we're off to the doctor."

"Even if it happens at night, I'll call his pediatrician if he's got the runs."

H. MEDICATION

1. Familiar medicines

The participants know there are different drugs to treat different aspects of a diarrhea attack. That is, they understand that one product alone cannot clear up all the symptoms.

The medicines they administer without a prescription when the diarrhea is not too serious include Terramicina, Kaopectate, Bactrim, Pepto Bismol and Kaomycin. They know these contain antibiotics and are intended for infections. These drugs are all administered to control the diarrhea. Kaopectate is used by mothers from all groups because they believe it to be inoffensive since "it contains no antibiotics" and will not harm their children's stomachs.

When the diarrhea persists and is accompanied by vomiting and/or a fever, mothers then suspect an infection, which requires antibiotic treatment. The drugs they know of for infections are Kaomycin, Pentrexyl, Amoxil, Furoxona, Ampicilina, Penprocilina, Cromicina and Caosol.

The drugs for amoebas with which they are familiar are Flagenase and Diodoquin. They identify Flagyl as a medicine for amoebas and parasites, and Piperazina as being only for parasites. Bonadoxina is very well-known for treating vomiting, and for replacing the intestinal flora, Latopetin and Floratil.

Tempra is the main medicine used to combat fevers, although one group mentioned "acetyl acid". Melox is used for inflammations, gases and colic, Flanax for inflammations (Table 14).

2. Effectiveness of these medicines

The participants evaluated the effectiveness of these drugs in terms of reaction times and observable results (Table 15).

Mothers in both cities expect that in a short period of time —around half an hour— the child will "calm down" and "cheer up".

"When it works, half an hour later he calms down. The improvements are quick to see in his appearance and mood." (Middle class, Mexico City)

An hour or two after administering the medicine, they expect a fever to have subsided, the diarrhea to have stopped, the smell to have disappeared, and the child's appetite to be returning.

Between four and six hours after medication, they expect the diarrhea to stop, high temperatures to go down, and for the child to begin eating and cheer up.

They will wait a maximum of 24 hours for the drug to "stop the diarrhea". If it takes longer, they do not consider it effective.

"I only wait 24 hours, because a good medicine doesn't take any longer.
(Working class, Villahermosa)

3. Preferred presentations

According to the participants, the ideal presentation for a diarrhea drug is in suspension form. They say that it is easier for the children to swallow than a tablet (Table 16).

"Suspensions are the best for diarrhea, because some children don't know how to swallow tablets." (Working class, Mexico City)

In addition, suspensions do not hurt like injections.

"They won't take an injection, it hurts them." (Working class, Mexico City)

Nevertheless, mothers recognize that the problem with suspensions is their slow action and that when the child is very ill or is vomiting, he cannot hold it down.

"Suspensions are better, although if they're vomiting it won't stay down."
(Middle class, Mexico City)

As a result, they believe injections are better for severe outbreaks because they act faster, although they prefer to use them as a last resort because they do not like to see their children suffer.

"I prefer injections because they go right in; they work faster." (Working class, Villahermosa)

4. Expenditure on medicines

The participants were asked about how much the drugs for an outbreak of diarrhea cost them (Table 17).

a) Working class

In general, members of the working and lower-middle classes think it is appropriate to pay from MEX \$20,000 or \$30,000 up to \$50,000 for drugs to treat a diarrhea attack. Working-class mothers in Mexico City spend from \$40,000 to \$50,000 (USD \$13 to 16) on drugs until the diarrhea clears up, and even as much as \$60,000 (USD \$20) on occasions. This amount is significant to these mothers and does seem steep to them, but they are willing to pay whatever it costs to cure their children. Working-class mothers from Villahermosa spend from \$30,000 to \$50,000 (\$10 to \$16). They also see it as a large expense, using money earmarked for other purposes. They mentioned that the cost was lower when no infections or amoebas were present.

They believe that \$20,000 or \$30,000 would be a reasonable amount for an effective diarrhea treatment.

"It's a lot of money, but because it's for our kids it doesn't matter."

"We have to cut back on other food items to pay for the medicine."

"If it's not an infection, you'll spend around \$20,000 or \$30,000, certainly no more than \$50,000."

b) Lower-middle class

The middle-class mothers from Mexico City reported that they spend as much as \$30,000 or \$50,000 (USD \$13 or \$16). They think \$30,000 is a fair amount because it does not affect their family budget, but that \$50,000 is a major expense that they cannot prepare for. The Villahermosa middle-class groups also spend up to \$50,000 on drugs: one group did see it as a major expense, the other did not.

"It is a lot, because it's unplanned."

"It does affect us, we have to struggle to make ends meet."

"Spending \$50,000 doesn't really affect me."

In the group of mothers that claimed it would not affect their budget, the interviewees said they would resent it if it were a prolonged illness but not in the case of an occasional complaint like diarrhea. They also said that since their children's health was involved, the cost did not matter.

"We don't care about that; we care about the child's health. You can't put a price on that."

It should be pointed out that the mothers in this middle-class group from Villahermosa appeared to be slightly better off than the other group, and so the cost of \$50,000 would affect them less.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

IV. ORAL REHYDRATION SALTS

A. KNOWLEDGE

Oral rehydration salts (ORS) are known as "oral serum" by mothers in both locations, Mexico City and Villahermosa. They know that ORS are used to replace fluids lost through diarrhea and excessive sweating (Table 18).

"The serum is used to rehydrate them."

They also understand that ORS only rehydrates the child and does not cure diarrhea.

"But the serum won't stop the diarrhea. It will replace what he's losing."
(Middle class, Villahermosa)

The only brands of ORS known to the mothers are Pedialyte and Vida Suero Oral.

The mothers know that Pedialyte, once opened, and reconstituted Vida will last only 24 hours. Even those who have never used either product imagine that they can only last 24 hours. They know that once opened, Pedialyte must be kept in the refrigerator. Of interest is the fact that in one working-class group in Mexico City it was mentioned that Pedialyte serum lasted longer than 24 hours, unlike Vida Suero Oral. The bottled presentation makes them believe it can last longer.

"You don't throw Pedialyte away, just put the cap back on and use it again the next day."

The mothers associate oral serum with speed and effectiveness.

"As long as they can hold it down, the serum acts fast." (Middle class, Mexico City)

In Mexico City and Villahermosa they know that the serum is for diarrhea. The Villahermosa mothers also commented that it should be given to children who are perspiring more profusely because of hot weather and to those who have colds.

"Also, with the climate here and the heat, they sweat." (Middle class, Villahermosa)

"I like to give them serum during the hot season." (Working class, Villahermosa)

B. BELIEFS

1. Usefulness, effectiveness and safety

One of the common beliefs about ORS is that "it is not a drug" and therefore can be given to children like water without any cause for concern. This belief was expressed to a greater or lesser extent by all the groups.

"I always give her serum even when she doesn't have diarrhea." (Middle class, Mexico City)

"It doesn't affect children; it's not medicine." (Middle class, Mexico City)

"In other words, it's like water. It doesn't contain any drugs." (Middle class, Villahermosa)

"You shouldn't compare it to medicine. It's just to replace fluids." (Working class, Mexico City)

The occasional participant was at odds with the idea of giving her children serum when they weren't sick with diarrhea or perspiring.

"I think it does contain drugs." (Middle class, Villahermosa)

"Perhaps in Chiapas where it's very hot, but I think if they drink a lot of serum they can retain water and get fat." (Middle class, Mexico City)

Some of the mothers believe that ORS is harmless because their doctors have told them that their children can drink as much as they want.

"The pediatrician told me to give him as much serum as he wants." (Middle class, Mexico City)

As a result, they think that ORS can be used on a day to day basis instead of water.

"You can use it instead of water." (Middle class, Mexico City)

"How much? As if it were water, as much as he wants, there's no limit. Whenever he wants some." (Working class, Mexico City)

Some of the participants thought that adults should drink ORS since, besides being good for them, their children would get used to the idea and accept it more easily. Some of the Villahermosa mothers reported enjoying drinking it.

"We should get into the habit of drinking serum instead of water. Then, when the children get diarrhea, we won't have the problem of their not wanting to drink it." (Middle class, Mexico City)

"I like to drink it, too. It's good cold." (Working class, Villahermosa)

"I use Pedialyte when I'm hung over, the morning after." (Middle class, Villahermosa)

The mothers also said that ORS is good for sportsmen or people who exert themselves physically.

"They recommend that people who exercise a lot drink it instead of water." (Middle class, Mexico City)

The idea that ORS is harmless and can be taken without restrictions is reinforced by the opinion that besides replacing fluids, it is also a kind of food. It can also be used as a substitute for milk, which is normally suspended when the child has diarrhea (Table 19).

"For me the serum is a food; it's all right to stop the milk if he drinks his serum." (Working class, Villahermosa)

"What is the serum for? It's to feed them. If they're not getting milk, they should get their serum." (Working class, Villahermosa)

The idea that ORS is harmless because it is not medicine is based on pediatricians' suggestions that children can be given as much as they want. They also believe that ORS is a food and that athletes are told to drink it. Finally, it is considered innocuous because Pedialyte comes in different colors and flavors and because pediatricians recommend that flavorless Pedialyte be mixed with water or soda. The product is not considered a drug and is viewed as a soft drink that nourishes the child in addition to replacing lost fluids.

2. Contents

Working-class participants in both Mexico City and Villahermosa stated that ORS contains vitamins, either A, B, or C.

"It's like a vitamin; it gives life to the person." (Working class, Villahermosa)

"It contains vitamins. Vitamins for the bones." (Working class, Mexico City)

Some also believe it to contain "potassium", "iron", "phosphorus" (working class, Mexico City), or "sodium" and "salts" (middle class in Mexico City and working class in Villahermosa), or "minerals" and "electrolytes" (middle class).

The working-class mothers in Villahermosa also named sugar, coloring agents and artificial flavors as components of ORS. These ingredients are associated with flavored Pedialyte in particular.

It contains water, sugar and salt, according to middle-class mothers in Mexico City and working-class mothers in Villahermosa. This is because some doctors suggest that if the child refuses prepared ORS, he can be given a mixture of water, sugar and salt, used as if it were serum.

Among working-class mothers in particular, there exists the belief that ORS contains vitamins and is therefore nutritious for the child (Table 20).

C. SUBSTITUTES FOR PREPARED ORAL SOLUTION

Mothers often give their children substitutes for prepared ORS; in other words, they mix their own serums. The suggestion comes from the doctors, when the children refuse to take ORS.

The most common formula is Sidral with Tehuacán, followed by boiled water with lemon and salt and, in third place, boiled water with salt and sugar. They also mix prepared ORS with soft drinks so the children accept it. This is common in Villahermosa, often at the suggestion of the pediatrician. Sometimes ORS is also mixed with milk or water.

"Pedialyte serum mixed with apple soda." (Middle class, Villahermosa)

"The pediatrician told me I could give her half water, half serum." (Middle class, Villahermosa)

Coca-Cola mixed with Tehuacán is also used by middle-class mothers in Mexico City to replace liquids and stop diarrhea; it is less common than the other recipes, however (Table 21).

D. PREPARED ORAL SOLUTION VERSUS HOME RECIPES

Mothers think that prepared ORS offers more advantages than home-made serums.

1. Prepared oral solution

a) Advantages

The main advantage of commercial ORS is that it is more hygienic. The serum comes ready-constituted and is drunk directly. Home remedies, on the other hand, can become contaminated during preparation if clean utensils are not used.

Working-class mothers in Mexico City believe bottled solutions to be more nourishing than home-made alternatives, even though they do recognize that the serum they prepare is effective and fulfills the same rehydrating function as commercial ORS. They believe that, unlike home-made versions, prepared serum contains vitamins.

"Home-made recipes are good, but they don't have vitamins." (Working class, Mexico City)

"Tehuacán mixed with Sidral is also good, but it has no vitamins." (Working class, Mexico City)

So, oral rehydration salts are considered more effective than home-made preparations, because they contain components that a serum made with water, salt and sugar does not.

"But the other minerals in a Pedialyte or Vida serum are not going to be replaced with glucose and sodium." (Middle class, Villahermosa)

b) Disadvantages

The only major problem with commercial serum —either bottle or sachet— is the unpleasant taste and its consequent rejection by the children. "Only babies will drink it", since older children do not like the taste.

"When they're older than two, no. No, much before, they stop drinking it before the first year." (Working class, Mexico City)

As a result, mothers with older children prefer home-made serum or a mix of ORS and apple soda.

One working-class mother from Mexico City stated that home-made serum is better because Pedialyte contains a lot of "chemicals". They think that it contains coloring agents and artificial flavor.

c) Benefits

The benefit of commercial ORS is the confidence it instills by being a product prepared by experts using a formula that makes it more effective or more reliable than home-made serums (Table 22).

"People trust this kind of serum more." (Middle class, Villahermosa)

"Confidence because it's prepared by experts." (Middle class, Villahermosa)

2. Home-made serums

All mothers at times use their own recipe for serum. In the working-class groups from Mexico City, some mothers prefer it to commercial ORS.

a) Advantages

Some working-class mothers in both cities believe that home-made serum is purer than commercial ORS, because they themselves take pains to boil the water correctly.

"I would recommend water with lemon and salt because its purer, more pure than serum." (Working class, Mexico City)

"Home-made is much better, because it's been boiled properly." (Working class, Villahermosa)

Another advantage is that the children accept it more easily because its taste is not unpleasant.

"Children prefer water with lemon and salt." (Working class, Mexico City)

Middle-class mothers in Villahermosa use home-made ORS only as a temporary measure; they believe them to be effective only for mild diarrhea. For more serious outbreaks, they prefer commercial ORS.

"It depends on how serious it is; if there's a risk of dehydration, you had better use commercial serum. But if it's only just beginning, you can give them a home-made recipe." (Middle class, Villahermosa)

No open mention was made of the economic advantage of home-made ORS. This aspect has to be important to working-class mothers, even the ones who claim that the cost of medicines does not matter when their children's health is at question.

b) Disadvantages

The main disadvantages of home-made ORS are its lack of vitamins and reduced effectiveness. Working mothers do not believe that it contains the same vitamins, minerals, or electrolytes as the commercial solution.

Middle-class mothers in Villahermosa consider it less effective than commercial ORS for a serious diarrhea attack with dehydration.

c) Ideas

Home-made ORS is trusted for replacing fluids. This idea is supported by medical opinion, since it is the doctors who suggest it. As mothers believe that prepared ORS contains other substances, such as vitamins, minerals and electrolytes, however, they think that a home-made solution cannot be as good, nutritious and effective for their children as a commercial preparation. This leads to perceptions of the limited effectiveness of home-made serum (Table 22).

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

V. PEDIALYTE AND VIDA SUERO ORAL

A. EVALUATION OF PEDIALYTE

Pedialyte is the best known and most widely-used prepared oral solution among the mothers. Most of them identify it as the oral solution that comes in different flavors.

1. Advantages

One of Pedialyte's main advantages is that it is considered more hygienic than Vida Suero Oral since it comes ready-prepared and there is no danger of contamination. Mothers like its cap because they feel they know the bottle has not been opened.

"Boiled water is not the same as laboratory water; there's more hygiene in a laboratory." (Middle class, Mexico City)

Another advantage of Pedialyte is its taste. They believe that this solution tastes better, less salty than Vida Suero Oral, in both the natural and flavored presentations.

"Pedialyte tastes better than the sachets."

They trust this solution because they believe it to be very effective.

"I think Pedialyte is very effective." (Working class, Villahermosa)

This confidence arises from the recommendation of their pediatricians. In other words, Pedialyte is supported by their doctors.

Another advantage mentioned by working class mothers in Mexico City is that the name "Pedialyte" is easy to remember. Indeed, all the groups remembered it spontaneously, while the name "Vida Suero Oral" did not come to mind. It was referred to as "the one from Social Security" or "the one in the sachet".

Significantly, one working class group (Mexico City) commented, incorrectly, that the Pedialyte serum lasted "more than 24 hours", giving it an advantage over Vida Suero Oral (Table 23).

"You don't have to throw Pedialyte away. You just cover it and you can use it again the next day." (Working class, Mexico City)

"It lasts longer and the sachet one doesn't." (Working class, Mexico City)

a) Natural Pedialyte

It was common to hear that "white" Pedialyte tasted of "coconut milk" and was therefore more acceptable.

"It tastes of coconut milk." (Middle class, Mexico City)

Some mothers commented that their children prefer white Pedialyte over the flavored presentation.

"I give her the plain one. They accept the white more easily than the colored kind." (Working class, Mexico City)

"Some children will even drink the white one quite happily." (Middle class, Villahermosa)

There was no marked preference for either natural or flavored Pedialyte.

b) Flavored Pedialyte

Some participants claimed that flavored Pedialyte was more attractive to children because they associate it with soda and therefore drink it more easily. They say that the flavored kinds taste better than the plain presentation.

"They like flavored Pedialyte better. You give it to them and it's like a soft drink." (Middle class, Mexico City)

The flavored presentation is associated with soft drinks and, as a result, mothers give it in unlimited amounts (Table 23).

2. Disadvantages

a) Natural Pedialyte

In general they think that only babies will accept natural Pedialyte, since when they are older they refuse to drink it. Mothers believe that babies cannot distinguish colors or tastes, and so they readily accept it.

"My daughter, because she's still a baby, drinks spoonfuls of the natural one." (Middle class, Mexico City)

Mothers say that white Pedialyte tastes like Vida: unpleasant, because of the salty taste.

"White Pedialyte tastes like the one Social Security gives you." (Working class, Mexico City)

b) Flavored Pedialyte

The disadvantages of flavored Pedialyte were mentioned by middle-class mothers in Villahermosa. In their opinion, flavored serum is equally unpleasant as the "white" version; they simply have a different color.

"Pedialyte tastes bad. Either strawberry or orange, it tastes bad." (Middle class, Villahermosa)

"All they did was put color in it, because it tastes the same. It doesn't taste just the same, but it tastes just as bad." (Middle class, Villahermosa)

They also describe the taste as "kind of bitter", like medicine, and that it must have "preservatives" or "dyes", making it less natural and more "chemical".

3. Benefits

The main benefit of Pedialyte is its great effectiveness in replacing fluids that mothers associate with it and the confidence which the product inspires in them. Natural Pedialyte is accepted for babies and is identified as being appropriate for babies, who cannot distinguish between colors and tastes. It is more natural, less "chemical".

The benefit of flavored Pedialyte is the preference shown for it by children 12 months and older. For them, color and taste are important and this encourages consumption.

The added value of Pedialyte is the mothers' confidence in it because it is a hygienic, quality, effective product. This confidence generates a high level of product acceptance and, consequently, high consumption levels for both the flavored and natural presentations (Table 23).

B. EVALUATION OF VIDA SUERO ORAL

In all the groups some reference was made to the Vida Suero Oral serum, better known as "Vida". The mothers identified it as the serum they get from Social Security or health centers. Vida Suero Oral was particularly well accepted and consumed by middle-class mothers in Mexico City, although they use Pedialyte more.

In the remaining groups it is not used, either because the mothers tried it once and did not like the salty taste or because its preparation was impractical. Some mothers have never tried it—although they do say that they have been given some and still have it at home—out of reluctance to change brands. They are satisfied with Pedialyte and trust it.

"To tell the truth, I've never used it. I've been given sachets and never opened them, because I'm used to Pedialyte and I trust it." (Working class, Villahermosa)

1. Advantages

Mothers do not see many positive advantages in Vida serum. Some mentioned that it does contain the necessary electrolytes, as well as all the vitamins and nutrition they attribute to commercial serum.

"It's ideal because the sachet contains the amount of electrolytes necessary for its preparation." (Middle class, Mexico City)

Another advantage is that it is considered practical, to a certain extent, because it takes up little space in the home and can be stored easily.

Another advantage of this serum, which the mothers do not conceive of as such, is the fact that it is given by the spoonful because, in their opinion, too much can lead to vomiting. They are therefore more careful with the amount they give their children. They believe there is no risk of vomiting with Pedialyte and therefore give it to their children in a feeding bottle so they drink more (Table 24).

"How do you prepare Vida? In a liter of water. You shouldn't give them too much, it's better by the spoonful. You can give them Pedialyte in a bottle and they drink it like it was water." (Working class, Mexico City)

"The spoon-fed one? You have to give it by spoonfuls. If they drink more they'll start vomiting." (Working class, Mexico City)

2. Disadvantages

a) Taste

The main negative aspect of Vida Suero Oral is its taste, which most identify as "horrible". They describe it as "salty", excessively so. Pedialyte is also considered salty, but less so.

"And so how does the sachet taste?"

"Oh, horrible! It has a very distinctive taste." (Working class, Mexico City)

"The one you get from the drugstore tastes better." [Pedialyte] (Working class, Mexico City)

b) Preparation

A second important disadvantage of sachet ORS is the fact that it must be reconstituted. On the one hand the mothers are not willing to invest the time necessary to prepare it, and on the other they feel they could compromise the hygiene of the product if it is not prepared correctly.

They also believe that, in an emergency, they will be unable to prepare it because of their nervous state and because they will lack the patience necessary to wait for it to cool down before giving it to the child. As a result, they consider it impractical for emergencies.

c) Confidence

Some participants expressed their low level of confidence in the government health sector. Since Vida Suero Oral is identified with the state medical services, they automatically mistrust it: they have no faith in its abilities.

"Social Security gives you oral serum in a sachet; I don't trust it." (Working class, Villahermosa)

3. General perceptions

Vida Suero Oral enjoys a low level of acceptance and low consumption due to its unpleasant taste and consequent rejection by children. In addition, it is impractical to prepare, especially in emergencies.

Mothers think it can only be obtained in health centers and not in drugstores. They mistrust the product because it comes from the government's health sector. This mistrust is reinforced by the fact that it is distributed gratis in health centers, which leads to its quality being questioned (Table 24).

"I honestly have never given sachet serum to my children. I was given it by Social Security, but I don't trust it. Perhaps it's because they give it away free." (Working class, Mexico City)

Perhaps buying Pedialyte represents a degree of status, since it is produced by a private company and carries a cost which they are willing to pay. The mothers stated that cost was no objection when treating their children.

C. DOSAGES OF ORAL REHYDRATION SALTS

The amount of serum that mothers say a child should be given is very variable. Some say that it is the amount indicated on the bottle or sachet, whereas others say that it is what the pediatrician states.

Vida Suero Oral is administered by spoonfuls, although one or two also spoke of ounces. Dosages vary from five spoonfuls every hour and a half or one teaspoonful every five minutes to two or four ounces per evacuation.

Mothers from two groups in Mexico City (middle and working class) and from one in Villahermosa (middle class) believed that a child can be given all the serum he wants, regardless of whether it is more than a liter (Table 25). These mothers are unaware of reasons for limiting the amount of serum administered.

"Why shouldn't you give him more?"

"I don't know. I thought serum couldn't do any harm." (Working class, Villahermosa)

"You stop when you're scared it's going to harm him." (Working class, Villahermosa)

According to these mothers, the child can be allowed to drink it freely because it is not a drug: it is like a soft drink that contains vitamins.

D. PLACE OF PURCHASE

The mothers buy Pedialyte in drugstores, supermarkets, and the pharmacy sections of supermarkets. Any of these stores are acceptable.

On the other hand, they believe that Vida Suero Oral can only be obtained from health centers or other agencies of the government medical service. They all know the sachets are free, but believe that they have to go to one of these public institutions to obtain them. Only one group (middle class, Mexico City) commented that Vida could be bought in drugstores (Table 26).

"Drugstores sell the sachets. I've bought them there."

E. PREFERRED PRESENTATION

1. Bottle (ready-mixed solution)

The preference for bottled serum is overwhelming. Its main advantage is its practicality. Mothers consider it practical because if they are not at home, they do not have to worry or look for a place to prepare the serum. It is also practical because they do not have to boil water or wait for it to cool. It is also practical when they travel. Another point in favor of the bottled solution is that it inspires more confidence with regard to hygiene, since it is prepared by experts in a laboratory.

"Which do you trust the most?"

"The bottled one. Because its cleaner, more trustworthy." (Working class, Mexico City)

In addition, they like the bottle: they consider it esthetically pleasing and attractive. Some working-class mothers in Mexico City believe that the solution lasts for more than 24 hours, precisely because it comes in a bottle (Table 27).

2. Sachet (powdered salts)

Sachet serum has a low level of acceptance among mothers, mainly because it is considered impractical when they are not at home. They only consider it useful at home. A second problem is that after investing time in its preparation, they must wait for the solution to cool before administering it to their child; this is impractical in an emergency situation.

Some mothers have trouble measuring out the liter of water necessary to dissolve the powder.

"The preparation is a problem because of the measurements." (Middle class, Villahermosa)

"Calculating a liter is a hassle." (Middle class, Villahermosa)

Only a few middle-class mothers in Mexico City consider the sachet practical because it can be stored at home without occupying too much space (Table 27).

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

VI. PERCEPTIONS OF THE PRESENTATIONS

A. VIDA SUERO ORAL

1. Identification

Presenting a sachet of Vida Suero Oral provoked several comments regarding its identification. In all the groups, with the exception of two of the Villahermosa groups, the main spontaneous association was with the government's health services. One middle-class and one working class group from that city identified it as the product advertised on television by the health sector in Villahermosa, but different from the product distributed free in hospitals.

One working-class group in Villahermosa expressed the opinion that the sachet shown to them had to taste better than the one given away by the health authorities. The content of this sachet was different from the ones they had seen. The sachet's design was pleasing to all the mothers.

"It's a matter of trying it, but I think it has to be good, it has to have more ingredients." (Working class, Villahermosa)

In turn, an association between the sachet and the product with an unpleasant taste for children arose spontaneously in almost all the groups. The middle-class mothers from Villahermosa identified it as the product distributed freely to combat cholera in rural areas. They also identified it as the product advertised on TV by the Cantinflas cartoon character, but different from the product distributed by the health authorities (Table 28).

2. Impact of the design

The design of Vida Suero Oral had a strong impact and a high level of acceptance among the mothers. They referred to it as "pretty" and "striking" because of its "cheerful" colors. These aspects pleased mothers from all the groups (Table 29).

"It's very striking. And so, if the child sees it before it's prepared, he'll think it's a soft drink like Kool Aid and perhaps he'll drink it more easily." (Middle class, Villahermosa)

The design transmits an image of a tasty product. They commented that it was stimulating, that it "invited consumption".

"It's stimulating. It's a child who gives life, and who is healthy." (Middle class, Mexico City)

"Honestly, you see it and you say yes, I'm going to give it to my children."
(Middle class, Mexico City)

Some, however, were disappointed. Although the design is attractive, because of the taste they do not want to try it again.

"When the kid sees the sachet, perhaps he will want to drink it. But he won't like the contents." (Middle class, Mexico City)

"It looks tasty, but it isn't." (Working class, Mexico City)

a) Images

Mothers see the images on the sachet as a "happy" baby or a "healthy" child, full of "energy". The atmosphere perceived is "healthy" and "fresh". They also speak of the "tree of life".

All in all, the images transmit a message of life and they represent health.

b) Packaging

Mothers comment that children who see the sachet think it is candy or Kool Aid.

Villahermosa mothers said that the sachet was "water proof", an important feature for people who live in a warm, wet climate.

Some called the sachet practical because "it doesn't take up space", and said it was practical for when they were at home.

"Practical, because it doesn't take up much space, it's small, and you can carry it in your purse." (Middle class, Mexico City)

B. PEDIALYTE

1. Identification

Upon being shown a bottle of a Pedialyte, the mothers identified it as the serum they had been talking about throughout the session. It is considered a practical product (Table 30).

The plastic bottle is practical. Some participants commented that the plastic presentation is new and that previously it came in a glass bottle.

"It's new. It's better because it won't break. The one liter bottle was glass and it used to break." (Working class, Mexico City)

Likewise, the new half-liter size was considered practical.

"It's more practical because it's a half liter." (Working class, Mexico City)

Nevertheless, middle-class mothers in Mexico City would prefer an even smaller size, because they waste a lot.

"It's a lot and you have to throw it away after 24 hours." (Middle class, Mexico City)

"A smaller bottle would be better, half the size of that bottle." (Middle class, Mexico City)

One middle-class group in Villahermosa identified the Pedialyte bottle but were surprised at seeing a colorless solution: they had only seen the flavored varieties.

2. Impact of the design

The impact of the Pedialyte design is weak because it is not seen as being very attractive. This weak impression, however, does not affect the high acceptance rate of the product (Table 31).

Some participants said that the design was "very medical" and as a result a child would not want to take it.

"When the children get older, they realize it's medicine and refuse to drink it." (Middle class, Mexico City)

Mothers think the design is not attractive for children and that they would be more attracted by a label with bright colors or by a more striking bottle. Working-class mothers in Mexico City see the bottled solution as a "more complete product". Middle-class mothers from Mexico City, however, associate the bottle with other kinds of water that are sold, such as distilled water for ironing.

"It's very simple. It looks like other liquids, such as water for the iron."
(Middle class, Mexico City)

a) Bottle

The Pedialyte bottle is considered practical because:

- 1) It is made of plastic and will not break.
- 2) It contains 500 ml, instead of a liter, and so less is wasted.
- 3) It is useful when the mother is outside the home and cannot boil water.
- 4) The bottle can be used for other purposes once the solution is finished.

The bottle is seen as hygienic because the solution comes ready-prepared, you can see whether the liquid is dirty, and it has a safe, reliable cap.

"We like the safe cap. You can tell it's the first time it's been opened."
(Working class, Mexico City)

Some middle-class participants in Villahermosa, however, complained about the cap, since it is difficult to open (Table 31).

"The only problem is getting it open, because it's very difficult. It's better to slit it open with a knife and squeeze the bottle." (Middle class, Villahermosa)

b) Label

The mothers considered the Pedialyte label "very simple" or "unattractive". The ones who see it as being "like medicine" have greater faith in the product. Nevertheless, some mothers said that children resist taking Pedialyte when they see the product's label (Table 31).

c) Natural Pedialyte

Natural Pedialyte is favorably viewed. In comparison with the flavored product, it is deemed less chemical because it contains no coloring or artificial flavor. Likewise, it was judged to be more hygienic, because if the liquid were dirty it would be easy to detect (Table 31).

"I like the transparent liquid because you'd see if it were dirty." (Working class, Mexico City)

Pedialyte's design was judged to be unattractive by the test groups. Nevertheless, their reactions to the design are unimportant in comparison with the practicality of bottled serum.

3. Opinion on the price

When the members of the groups spoke of their opinions regarding Pedialyte's price, they did so spontaneously: the moderator had not mentioned the price (Table 32).

When asked to guess the price of Pedialyte middle-class mothers from Mexico City estimated MEX \$5,000 (USD \$1.60), which was judged expensive because the bottle contains less than a liter and much is wasted because of the 24-hour expiration period. The middle-class mothers from Villahermosa set the price range between MEX \$6,000 and \$7,000 (USD \$1.90 and \$2.25); they judged this to be a fair price, or perhaps a little too expensive for families with lower incomes.

Mothers in Villahermosa said that the price of bottled ORS varies a great deal depending on where and when it is bought. Drugstores in residential areas that stay open all night charge more than shops in the city center.

"The price varies, depending on where you buy it and at what time of day. It varies from \$6,000 to \$10,000." (Middle class, Villahermosa)

The Villahermosa working-class mothers calculate the price of Pedialyte at a lower level, between MEX \$4,500 and \$5,000 (USD \$1.45 to \$1.60); they consider this level reasonable. One group of working-class mothers in Mexico City set the price at \$6,000, deemed expensive because of the amount wasted and the unpleasant taste.

The other working-class group in Mexico City, however, set the price of Pedialyte at MEX \$9,000 (USD \$2.90), which higher than the real price, and said it was reasonable for them but expensive for low-income families. It is probable that those in this group really consume very little Pedialyte but claim they do because it gives them more status than the product distributed free of charge by the health authorities. Furthermore, because of their aspiration to belong to a higher socio-economic level, they say that \$9,000 is a reasonable price when they know that this price is high for them. As a result, they say it is " xpensive for low-income families", from which they exclude themselves.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

VII. PROPOSAL FOR A NEW ORS PRODUCT**A. PRICE**

The participants were told that a new ORS solution might appear on the market and they were asked what a reasonable price for it would be.

The responses of interviewees from both cities indicated a range of MEX \$4,000 to \$6,000 (USD \$1.30 to \$1.90). The only exception was one middle-class group in Mexico City that used Vida Suero Oral as a reference point, with a cost of \$750 (\$0.25): they said that a new ORS should not vary too far from that price. So the price they proposed fell in the range of \$1,500 to \$2,000 (\$0.50 - \$0.65).

The other middle-class group from Mexico City suggested a price of between \$2,000 and \$2,500 (\$0.65 - \$0.80) for a 250 ml presentation, since they believe such a size should exist to avoid wasting solution.

One of the middle-class groups in Villahermosa proposed \$4,000 (USD \$1.30) to make it accessible to everyone, and the other group said it would pay \$6,000 (\$1.90) but only if it had the same properties as Pedialyte.

The working-class respondents in Mexico City said they would pay something between \$5,000 and \$6,000 (\$1.60 - \$1.90), but only if it had a pleasant taste, prevented dehydration, and was also nutritious. However, they said the amount they should pay for Pedialyte was between \$2,500 and \$3,000, which means that \$6,000 would be a high price for them.

The working-class mothers from Villahermosa suggested a price between \$4,000 and \$5,000 (\$1.30 - \$1.60) for a new ORS (Table 33).

B. DESIRED PROPERTIES

For mothers to trust it, a new ORS solution would have to be effective and, secondly, have a pleasant taste. The taste is of great importance, because Pedialyte is considered effective but disagreeable. Consequently, a competitor to Pedialyte should have a better flavor.

Thirdly, the new serum should contain vitamins —or be nutritious— as the mothers believe to be the case with Pedialyte or Vida Suero Oral. Color is a secondary aspect on which the groups did not agree. They do not like colored Pedialyte because they see it as containing more chemicals, dyes and artificial flavor, unsuitable for babies, or simply having an unpleasant taste. Two groups did come out in favor of colored

solutions, however. One said it was the main feature the new ORS should have, the other stated that colored solution was fine for children aged one or two who refuse to take the unflavored product.

One of the groups suggested a solution colored like Coca-Cola, so the children would accept it more easily.

The bottle's design should be attractive. Some participants suggested including a straw, whereas others proposed using a bottle onto which a nipple could be screwed directly, without transferring the liquid to a feeding bottle.

One middle-class group from Mexico City wanted the new ORS to come in different sizes so they could choose the most appropriate and avoid wastage (Table 34).

C. PRESENTATION

The preferred presentation for the new serum is, undoubtedly, a bottle. Some participants suggested making it available in both presentations (liquid and powder) so while at home they could use the sachet and while away, use the bottled version.

D. PACKAGE DESIGN

The participants were strongly attracted by the label of Vida Suero Oral and suggested using a similar design for the new product.

1. Design elements

For the container, they first proposed a picture of a child doing something like "playing with a pet", "crawling about", "drinking a glass of water" (a reference to the product), or simply a child "with a bottle and diaper". Other participants instead suggested using a picture of some "character" that would be attractive to children.

The surroundings desired for the picture of the child were "woods", "a blue sky", "a mountain" or "a spring".

The colors they would particularly like to see are "striking" or "cheerful" ones, such as red and blue or pink and blue in reference to boys and girls (Table 35).

2. Names

It was difficult for the mothers to imagine names for a new ORS product, particularly because it is difficult to suggest one without having an idea of the product and the associated concept. Some groups did nevertheless make certain suggestions (Table 36).

The most obvious were connected with Vida Suero Oral:

"Vida y Energía" (Life and Energy)

"Vida y Salud para los Niños" (Life and Health for Children)

"Agua y Vida" (Water and Life)

There were also references to Pedialyte:

"Hidropedial", referring to water and Pedialyte or water and pediatrician

There were also original suggestions such as:

"Hidroboy", evoking water and children

"Super Suero", the best serum of all

Those participants who made no suggestions instead indicated the concepts they would like the name of the new serum to evoke:

Life, Energy, Health, Water, Hydro, Hydro and Child, Water and Child.

It was also suggested that the name be that of a cartoon character, to make it more attractive to children. However, this would have had the disadvantage of making it look like a soft drink for children.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

VIII. TEXTS

The participating mothers were asked to evaluate five promotional texts for oral rehydration salts. The order of presentation was changed in each session to avoid bias.

A. "ORAL REHYDRATION SERUM"

This text was preferred by two groups in Villahermosa (one working class, one middle class). The middle-class group liked it because "you just read it and you know what it does": in other words, it appeared very clear. The working-class mothers expressed joint preference for this text and one other; however, it was obvious that they didn't understand the word "oral".

"Do you know why it says "oral"? What makes it "oral"?
"No."

To confirm this, the other groups said that the word "oral" was not going to be clear to everyone (Table 37).

B. "REPLACES LIQUIDS, HELPS STOP DIARRHEA"

This text enjoyed more success among working-class mothers than in the middle-class sessions. It was preferred above all others by two Villahermosa groups and one Mexico City group.

It was preferred because it is "very clear". Some Mexico City participants did question the text, however, because they know serum does not help stop diarrhea. They maintained the text would only be believable if the serum contained a substance to help clear up diarrhea. Others said they might believe the text after testing the product.

The two Villahermosa groups did not question the text. They thought that if the text says it helps stop diarrhea, then the product must indeed do so.

The opinion was that the text was not credible, and would only be so if the content were changed. One group answered that a text like this one could cause problems because users would think that the serum cures diarrhea and would no longer buy medicine to control diarrhea attacks (Table 38).

C. "PREVENTS DEHYDRATION CAUSED BY DIARRHEA"

This text was the favorite in three Mexico City groups (two middle class, one working class). They said it was "credible" because the serum does avoid dehydration, that it was "a short text" and was "comprehensible for anyone".

"It's good for people who don't have much vocabulary because it says 'by diarrhea'. It's very clear, its credible, it can be understood by anyone."

The other groups —Villahermosa and one working-class session in Mexico City— did not like it because it seemed too "cold" or "wordy" for poor people. The Villahermosa mothers felt it was incomplete because there are other causes of dehydration besides diarrhea that are not mentioned. One working-class group did not understand the text (Table 39).

D. "TO REPLACE LIQUIDS LOST THROUGH DIARRHEA"

This text was selected as the best by two working-class groups (one in Mexico City and one in Villahermosa) and one middle-class group (Villahermosa). They considered it "clear for every social level", that it "explains what the serum is used for", and that it uses "simple words".

Other groups thought it "long" and "wordy", using more words to say the same as other shorter texts. The Villahermosa mothers pointed out that it was incomplete because fluids are lost through other causes besides diarrhea, such as vomiting or excessive perspiration (Table 40).

E. "FOR ORAL HYDRATION"

No group selected this text, since it lacks the word "serum" and therefore seems incomplete. In addition, the word "oral" is a problem.

F. THE BEST UNDERSTOOD TEXT

The text with the best chances of being understood by people from all walks of life is:

"TO REPLACE LIQUIDS LOST THROUGH DIARRHEA"

This text was understood by working-class women in both cities; indeed, it was chosen as the best by two of these groups because it uses simple words.

The problems of this text are that it is relatively long and makes no reference to perspiration as an important reason for liquid loss (Table 41).

G. SUGGESTED TEXTS

On the basis of the analysis of the texts, the following recommendations can be made for materials promoting oral rehydration salts (Table 42):

- Do not use the word "oral" because low-income mothers do not understand it.
- Do not use the words "hydration" and "dehydration" because working-class people may not understand them.
- Do not use texts that are too short because they are not sufficiently explicit, particularly for lower class people.
- Do not claim that the serum helps stop diarrhea: it will not be believed by everybody, leading to mistrust of the product.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

IX. CONCLUSIONS

A. DEHYDRATION

■ In Mexico, the mothers of small children identify dehydration as the main dangerous consequence of diarrhea, vomiting, or excessive sweating. They define dehydration as "loss of water" or "loss of liquids".

■ Mothers understand that the result of untreated dehydration is death.

■ Profuse perspiration is identified as an important cause of dehydration, particularly by mothers in Villahermosa due to the climate in their region.

B. DIARRHEA

■ Diarrhea is recognized as frequent bowel movements, more than two or three per day, with an unusual smell, color or consistency.

■ Vomiting and fever indicate a serious diarrhea attack.

C. TREATING DIARRHEA

■ The first steps taken by mothers when a diarrhea attack starts involve applying home remedies, both to control the diarrhea and to avoid dehydration.

■ To control the diarrhea they administer rice water and comstarch custard. Rice water improves consistency and reduces frequency.

■ So the diarrhea does not get worse, they change feeding patterns. They first suspend milk and then cut out heavy foods. These measures are common among mothers from both cities and rural areas and from all social classes.

■ The main home remedy to avoid dehydration is to give the child copious amounts of liquid. In Villahermosa mothers give their children a solution of oral salts, prepared as an emergency measure; they also provide other liquids such as apple soda, camomile tea, boiled water, and home-made ORS solutions. Working-class mothers in Mexico City use less commercial measures: they know of many home remedies and prefer them because of their better taste.

- Home-made ORS or substitutes for commercial solutions include apple soda mixed with mineral water, boiled water with lemon and salt, and boiled water with salt and sugar. In Villahermosa it is common to mix commercial, natural-flavored serum with apple soda or juice.

- Home-made ORS are used by all groups but are most common among low income people in Mexico City: they consider them purer, the children like them better, and they are cheaper. Doctors support and recommend their use. Their effectiveness is considered limited and unsuited to serious diarrheal outbreaks because they do not contain the vitamins and other substances that commercial solutions are believed to have.

D. ORAL REHYDRATION SALTS (ORS)

- All mothers are familiar with commercial ORS and know that its main function is to replace fluids lost through diarrhea and/or excessive perspiration. They also know the solution does not itself cure diarrhea.

- They believe commercial salts to be more hygienic than their home-made alternatives because they are prepared by experts in a laboratory and are therefore more reliable. They are also "more nutritious" due to the vitamin content they are believed to have. Consequently, they are believed more effective than home-made ORS.

- Conversely, commercial salts are considered "more chemical" (particularly flavored Pedialyte).

- Mothers know that prepared oral salts contain sugar and salts, but also believe they contain iron, phosphorous, minerals, and (among the Mexico City working classes) vitamins.

- They believe that the ORS solution is not medicine; consequently, it cannot harm children and they may be given as much as they want.

- In Villahermosa doctors say that children can drink as much ORS as they want; this gives rise to the belief that the serum is nutritious for the child.

- Because ORS is seen as a soft drink, they believe the child may drink it freely. The availability of Pedialyte in different flavors, together with the practice recommended by pediatricians of mixing it with soft drinks, reinforces the association with soda.

- The idea that a child can drink all the ORS he wants comes from the belief that it is not medicine, that it contains vitamins, and that it is like a soft drink.

- The best-known oral rehydration salts are Pedialyte and Vida Suero Oral; the one most often used is Pedialyte. The groups that revealed more consumption and acceptance of Vida Suero Oral were the two middle-class groups from Mexico City; nevertheless, they prefer Pedialyte.

■ Vida Suero Oral enjoys little acceptance and is seldom used; this is because of its unpleasant, salty taste, its low practicality due to the need to prepare it, and low hygiene standards in its preparation. It is also impractical in emergencies, because the mother must wait for the solution to cool.

The low level of consumption is linked to the idea that it can be obtained only in government health centers. Mothers have little confidence in the government's health services and therefore little faith in the product. The fact that it is distributed gratis makes them question its quality.

■ The high acceptance of Pedialyte serum is due to its taste (better than that of Vida Suero Oral) and its practicality. Natural Pedialyte has a pleasant, coconut taste, and is preferred because it is natural or "less chemical"; it is considered ideal for infants under the age of one who cannot distinguish among colors or tastes. Colored, flavored serum tastes better, but it is attractive for children over the age of one or two who, because they associate it with soft drinks, accept it more readily.

Pedialyte is particularly practical when traveling or when one is simply outside the home, because the solution is ready-prepared. Mothers trust it because it is a hygienic, quality, effective product.

Furthermore, much Pedialyte is consumed because it is a product manufactured by private enterprise and considered by mothers to be high quality, and because it is sold in drugstores at a price they are willing to pay. At the emotional level they feel better paying for a reliable, quality ORS than giving their children a product from Social Security which they mistrust and which, because it is free, is considered of questionable quality.

The fact that doctors recommend Pedialyte gives it the image of quality that mothers require to trust the product. Finally, the name "Pedialyte" is easy to remember.

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

X. SUGGESTIONS FOR A NEW ORS SOLUTION

A new oral rehydration salt product should have an attractive price, presentation and performance in order for mothers to buy it for their children. The product should meet the following requirements:

PROPERTIES

- Effectiveness
- Better taste than existing ORS products
- Unflavored for infants and for mothers who prefer natural, chemical-free products
- Attractive flavors and colors for toddlers (1 to 2 years)

PRESENTATION

- Plastic bottles, containing 500 and 250 ml
- Bottle suitable for storing other liquids
- Safe, reliable, easy-to-open cap

DESIGN

- Attractive container
- Label giving the impression that the product is a drug
- Label with eye-catching, cheerful colors
- Label with images depicting the concepts of life, energy, health and water

INSTRUCTIONS

- Instructions, administration method and recommended dose clearly specified
- Explanation of the dangers of excessive consumption

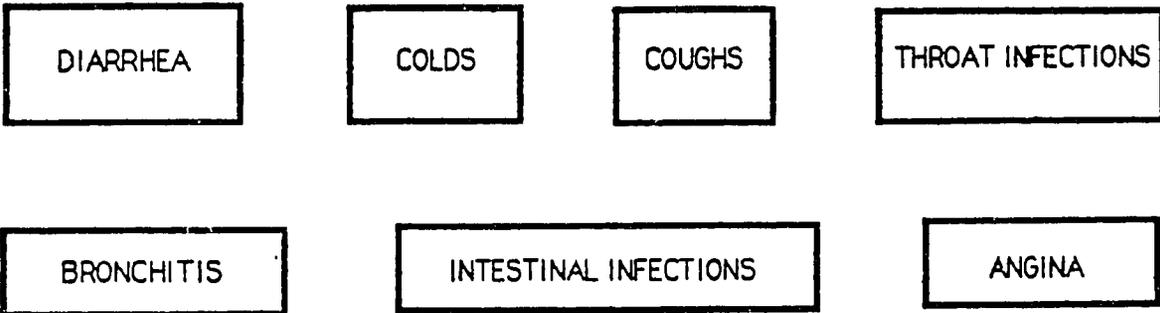
PRICE

- List price between MEX \$4,000 and \$5,000 for a 500 ml bottle

TABLE 1

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

MOST COMMON ILLNESSES AMONG YOUNG CHILDREN



MOST SERIOUS ILLNESS



TABLE 2

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

CAUSES OF DIARRHEA AMONG CHILDREN *

- TEETHING
- PUTTING THINGS IN THEIR MOUTHS ("PICKING UP EVERYTHING THEY FIND")
- FOOD THAT DISAGREES WITH THEM, HEAVY FOOD
- CHANGES IN MILK
- PARASITES, BACTERIA, AMOEBAS
- THROAT INFECTION SPREADING TO STOMACH
- FOOD SPOILED BECAUSE OF HEAT
- WEAK ORGANISM
- PACIFIER
- POOR FOOD HYGIENE
- TOO MUCH FOOD
- EATING WITH DIRTY HANDS
- EATING OFF THE STREET
- UNBOILED WATER
- SUCKING THUMB
- TOO MUCH MILK
- INSUFFICIENT FOOD

* In order of importance

TABLE 3

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

AGES WHEN DIARRHEA IS COMMON

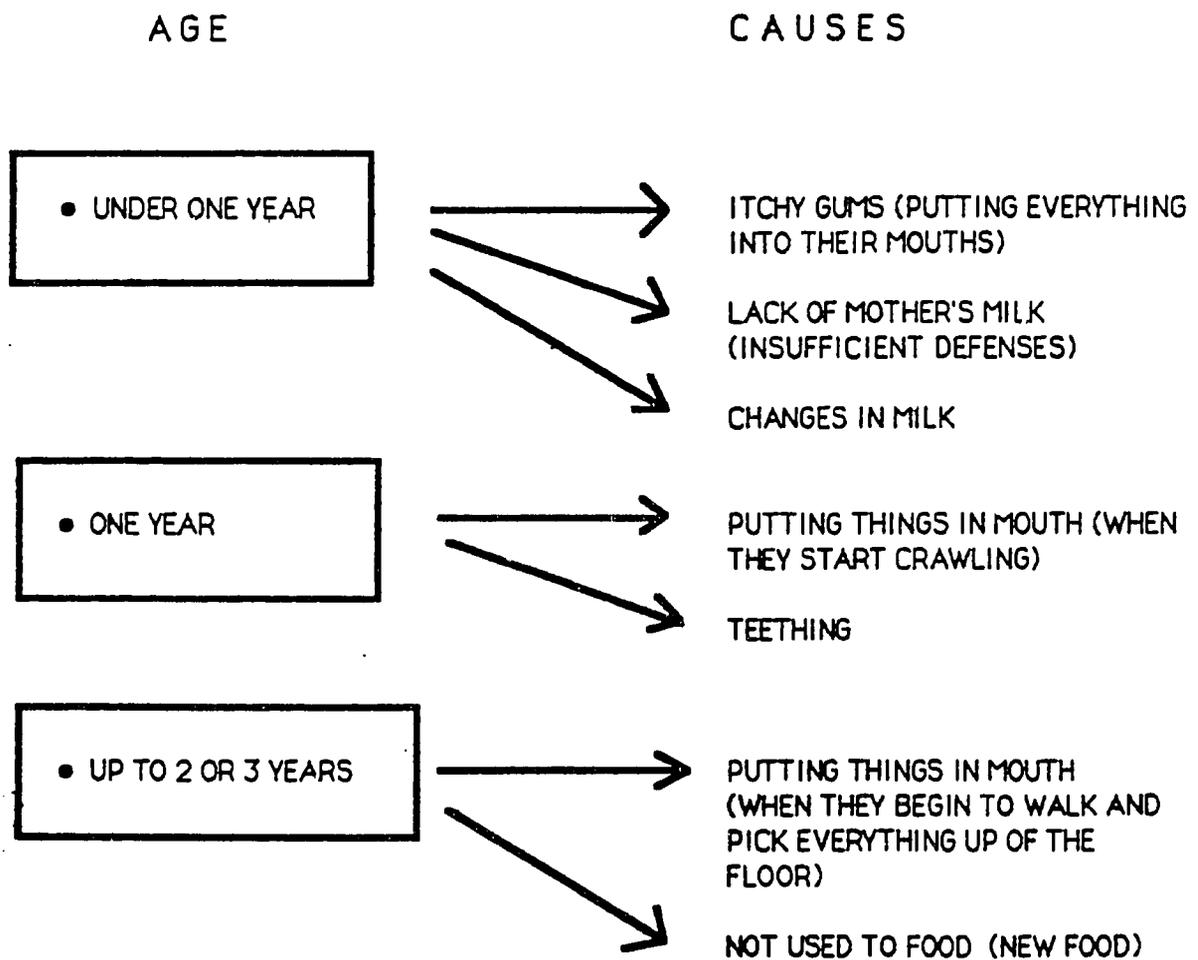


TABLE 4

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

CONSEQUENCES OF DIARRHEA

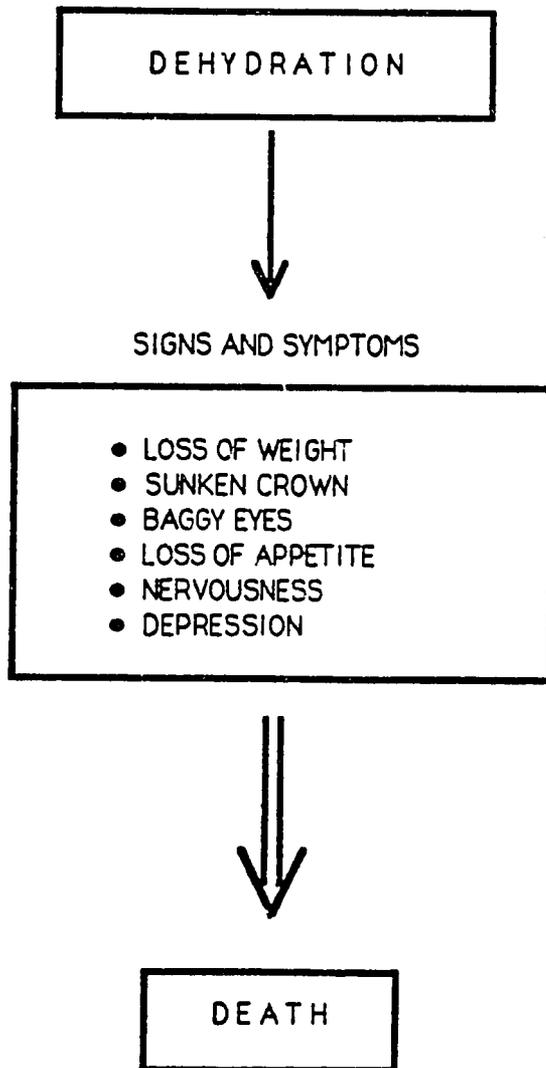
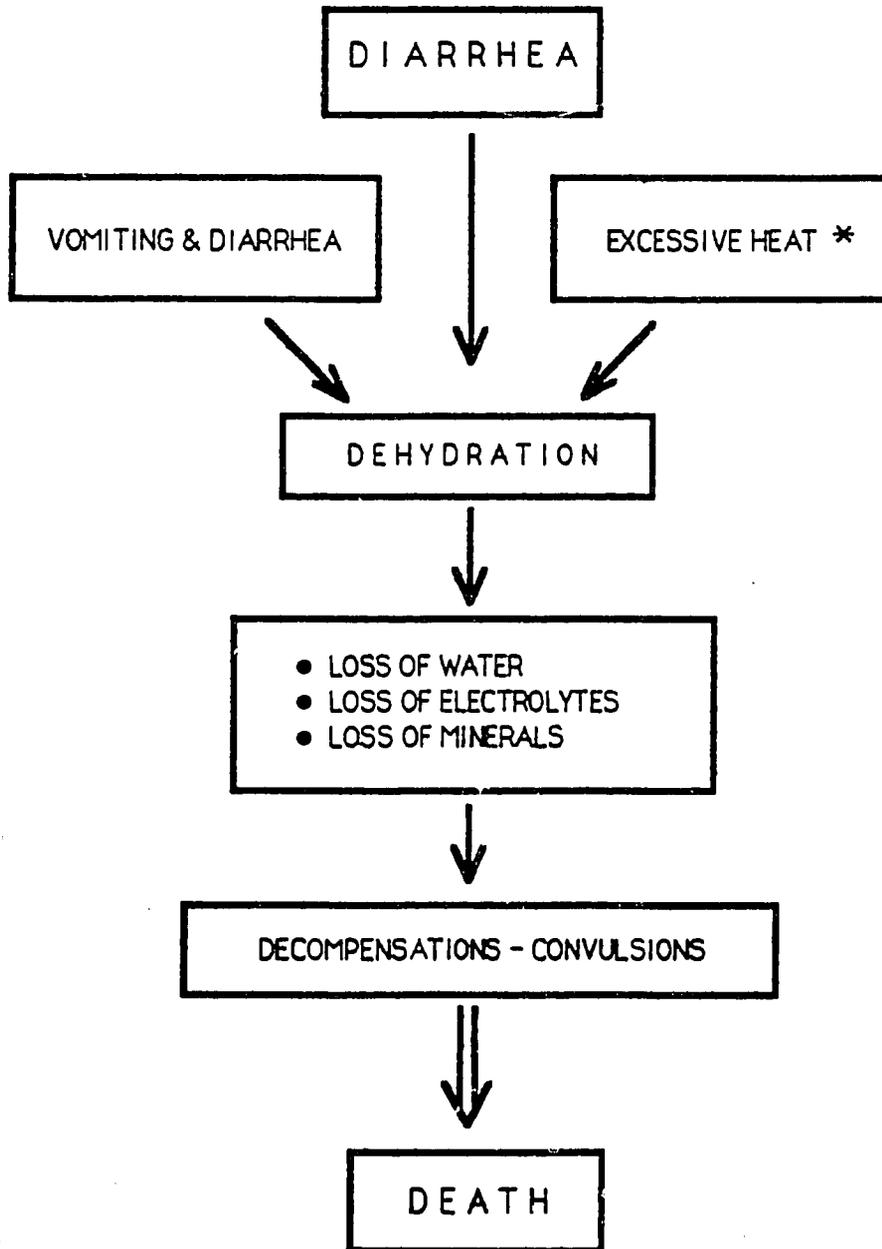


TABLA 5

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

CONCEPTUALIZATION OF DEHYDRATION

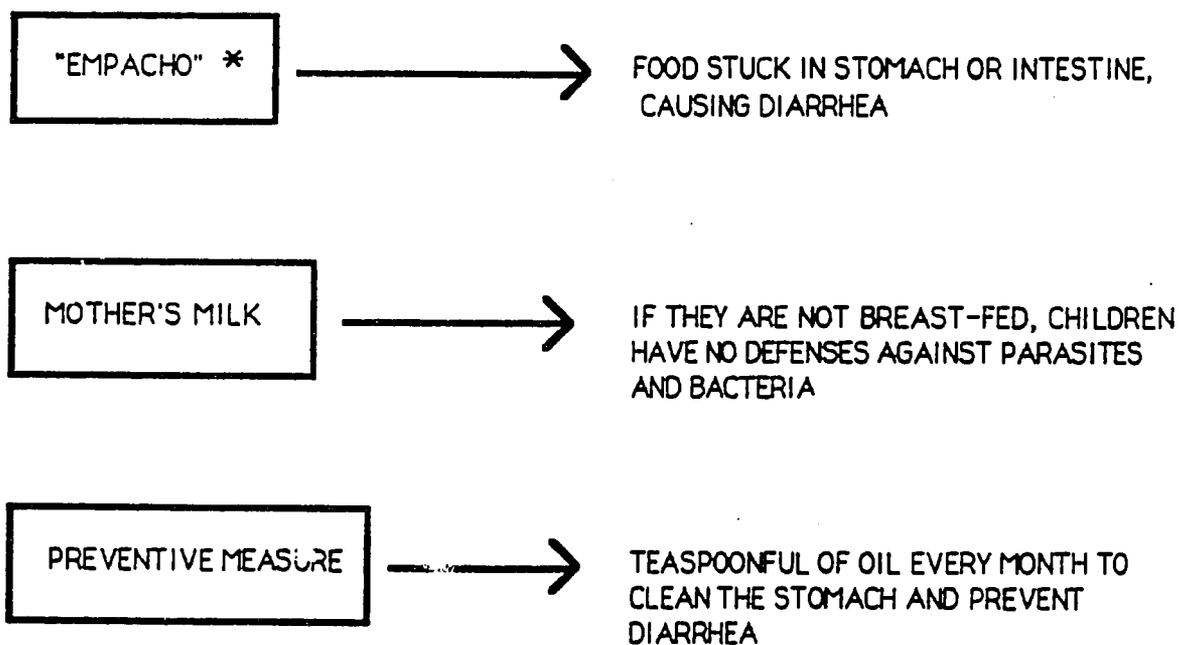


* Cause most often mentioned by Villahermosa mothers

TABLE 6

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

BELIEFS ASSOCIATED WITH DIARRHEA



* Belief most common among working classes in Mexico City, although also detected among the middle-class mothers in Villahermosa (one group) and in Mexico City (one group)

TABLE 7

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

EMPACHO *

DEFINITION

- FOOD STUCK IN THE STOMACH OR INTESTINE
- DRINKING TOO MUCH MILK: "ENLECHADO"
- BABY SALIVATING DURING TEETHING

CURES

- BACKBONE MASSAGE
- OIL
- MASSAGE FROM STOMACH TO HEEL
- OIL WITH MILK OF MAGNESIA, FOLLOWED BY TEA
- HERBS
- CUMIN TEA

* Belief most common among working classes in Mexico City, also seen among the middle classes in Villahermosa (one group) and in Mexico City (one group)

TABLE 8

ORAL REHYDRATION SALTS AND THERAPY
 CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

KINDS OF DIARRHEA

KINDS

DESCRIPTION

• TEETHING	→	WATERY STOOLS, NORMAL APPETITE, IRRITATED GUMS
• INTESTINAL INFECTION (VOMITING AND DIARRHEA)	→	STRONG SMELL, SLIMY, LUMPS OF MILK IN FECES, WATERY STOOLS
• FOOD DISAGREED WITH STOMACH	→	SLOPPY, NORMAL SMELL, FREQUENT STOOLS, VOMITING, NAUSEA
• AMOEBAS	→	TRACES OF BLOOD, PHLEGM IN STOOLS
• PARASITES	→	FREQUENT STOOLS, BAD SMELL
• DYSENTERY	→	TRACES OF BLOOD IN STOOLS
• SALMONELLA	→	GREEN STOOLS

TABLE 9

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

DYNAMICS FOLLOWING APPEARANCE OF DIARRHEA

CHILD (SYMPTOMS AND SIGNS)	MOTHER (FEELINGS)	ACTION
ONE OR TWO "SLOPPY" STOOLS, UNUSUAL SMELL, LOSS OF APPETITE, COLIC	CONCERNED	<ul style="list-style-type: none"> • HOME REMEDIES: RICE WATER, TEA, ORS* (PEDIALYTE OR HOME-MADE), PLENTY OF LIQUIDS
THREE OR FOUR "RUNNY" EVACUATIONS, LISTLESSNESS, FEVER	APPREHENSION, FEAR	<ul style="list-style-type: none"> • MEDICINE: ORS, PEPTO BISMOL, TERRAMICINA, KAOPECTATE, KAOMYCIN, TEMPRA, FUROXONA, BACTRIM • EXPERT MASSAGE **
<ul style="list-style-type: none"> • PERSISTENT DIARRHEA DURING ONE DAY, VOMITING, FEVER (INFECTION) *** • DIARRHEA PERSISTS FOR TWO OR THREE DAYS 	DESPERATION	<ul style="list-style-type: none"> • VISIT TO THE DOCTOR • ADMINISTRATION OF ANTIBIOTICS FOR THE INFECTION (PENTREXYL, FUROXONA)

* The use of ORS is among the first steps taken by mothers in Villahermosa

** Mostly among working-class mothers

*** Vomiting and fever indicate the presence of an infection

TABLE 10

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

SYMPTOMS AND SIGNS OF DIARRHEA

FIRST INDICATIONS OF DIARRHEA

- 2-3 EVACUATIONS WITH AN UNUSUAL SMELL
- STOOLS WITH AN UNUSUAL COLOR
- "RUNNY" STOOLS
- FEVER
- STOMACH ACHE
- NAUSEA, FEELS LIKE VOMITING
- LOSS OF APPETITE
- PALENESS, BAGGY EYES
- HANDS AND STOMACH FEEL WARM
- LISTLESSNESS, DOESN'T WANT TO PLAY

SYMPTOMS THAT CONCERN MOTHERS

- FEVER
- VOMITING
- FREQUENT STOOLS
- WATERY STOOLS
- LOSS OF APPETITE

SYMPTOMS INDICATING SERIOUSNESS OF DIARRHEA

- VOMITING AND DIARRHEA
- VOMITING, DIARRHEA AND FEVER
- LISTLESSNESS, SLEEPINESS
- MORE THAN 2 EVACUATIONS

TABLE 11

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

FIRST LINE TREATMENT FOR INFANT DIARRHEA

HOME REMEDIES	EXPECTED EFFECT
<ul style="list-style-type: none"> ● RICE WATER * ● CORNSTARCH CUSTARD ● GUAVA WATER 	IMPROVE CONSISTENCY AND STOP DIARRHEA
<ul style="list-style-type: none"> ● TEAS: CAMOMILE GUAVA LEAF GUAVA LEAF WITH SANGUINARIA EPAZOTE ORANGE PEEL, CUMIN AND CINNAMON 	IMPROVE CONSISTENCY, SOOTH PAIN, COMBAT DEHYDRATION IMPROVE CONSISTENCY REMOVE INFECTION KILL PARASITES CONTROL DIARRHEA
<ul style="list-style-type: none"> ● COCA-COLA WITH LEMON AND SODIUM BICARBONATE ● COCA-COLA WITH MINERAL WATER 	IMPROVE CONSISTENCY, CONTROL DIARRHEA
<ul style="list-style-type: none"> ● GARLIC BOILED IN MILK 	KILL AMOEBAS
<ul style="list-style-type: none"> ● COCA-COLA WITH CORNSTARCH CUSTARD ● ORS (PEDIALYTE OR SACHET) ● APPLE SODA AND MINERAL WATER 	PREVENT DEHYDRATION
<ul style="list-style-type: none"> ● OLIVE OIL 	"LOOSEN" FOOD

* Common first line treatment among all groups in both cities

TABLE 12

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

CHANGES IN FEEDING PATTERNS FOR A CHILD WITH DIARRHEA

- SUSPEND OR DILUTE MILK
- DO NOT SUSPEND FOOD *
- ALLOW LIGHT FOOD: CHICKEN, CHICKEN BROTH, VEGETABLES, BABY FOOD, TOAST, GELATIN, RICE GRUEL, WHEAT GRUEL
- OFFER STEWED FRUIT: APPLES, GUAVAS, PEARS
- OFFER CORNSTARCH CUSTARDS WITHOUT MILK
- AVOID EGGS
- AVOID IRRITANTS
- AVOID FATS
- SUSPEND FOOD WHEN DIARRHEA IS ACCOMPANIED BY VOMITING **

* General opinion among mothers in both cities

** Opinion of one working-class mother in Villahermosa

TABLE 13

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

FLUIDS GIVEN TO A CHILD WITH DIARRHEA

- COPIOUS AMOUNTS OF LIQUID
- APPLE JUICE OR SODA
- CAMOMILE TEA
- ORS *
- ORS MIXED WITH SODA **
- APPLE SODA WITH MINERAL WATER
- BOILED WATER
- BOILED WATER WITH SALT AND LEMON
- DILUTED MILK
- MILK SUPPLEMENT

* Administered immediately by Villahermosa mothers

** Common practice among Villahermosa mothers

TABLE 14

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

DRUGS GIVEN FOR DIFFERENT ASPECTS OF DIARRHEA

DRUG	ACTION
• TERRAMICINA	CONTROLS DIARRHEA
• KAOPECTATE	CONTROLS DIARRHEA, CONTAINS NO ANTIBIOTIC
• BACTRIM	CONTROLS DIARRHEA
• PEPTO BISMOL	CONTROLS DIARRHEA WHEN NO INFECTION PRESENT
• KAOMINPECTRINA	REDUCES EVACUATIONS
• KAOMYCIN	STOPS INFECTIONS, CONTAINS ANTIBIOTICS (NEOMICINA)
• PENTREXYL	STOPS INFECTIONS, CONTAINS ANTIBIOTICS
• AMOXIL	STOPS INFECTIONS
• FUROXONA	STOPS INFECTIONS, CONTAINS ANTIBIOTICS, REDUCES EVACUATIONS
• AMPICILINA	STOPS INFECTIONS AND CONTROLS DIARRHEA
• PENPROCILINA	STOPS INFECTIONS
• CROMICINA	STOPS INFECTIONS
• KAOPSON (CAOSOL ?)	STOPS INFECTIONS
• FLAGENASE	KILLS AMOEBAS
• BIDOQUIN (DIDOQUIN ?)	KILLS AMOEBAS
• FLAGYL	KILLS AMOEBAS AND PARASITES, CONTAINS ANTIBIOTICS
• PIPERAZINA	KILLS PARASITES

TABLE 14, CONT. ORAL REHYDRATION SALTS AND THERAPY
 CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

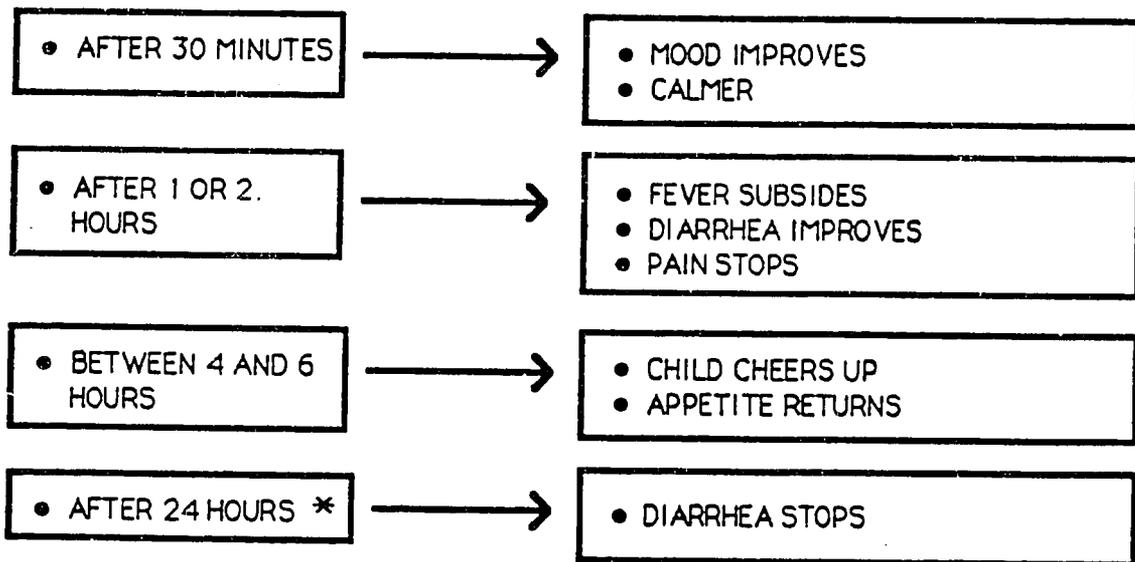
DRUGS GIVEN FOR DIFFERENT ASPECTS OF DIARRHEA

DRUG	ACTION
• BONADOXINA	STOPS VOMITING
• LATOPETIN	RENEWS INTESTINAL FLORA
• FLORALITE (FLORATIL ?)	RENEWS INTESTINAL FLORA
• ACIDO ACETIL (ASPIRINA ?)	REDUCES FEVER
• TEMPRA	REDUCES FEVER
• MELOX	ALLEVIATES INFLAMMATION, GASES, COLIC
• FLANAX	ALLEVIATES INFLAMMATION
• ORS (PEDIALYTE, VIDA)	PREVENTS DEHYDRATION

TABLE 15

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

RESULTS EXPECTED FROM DIARRHEA MEDICINES



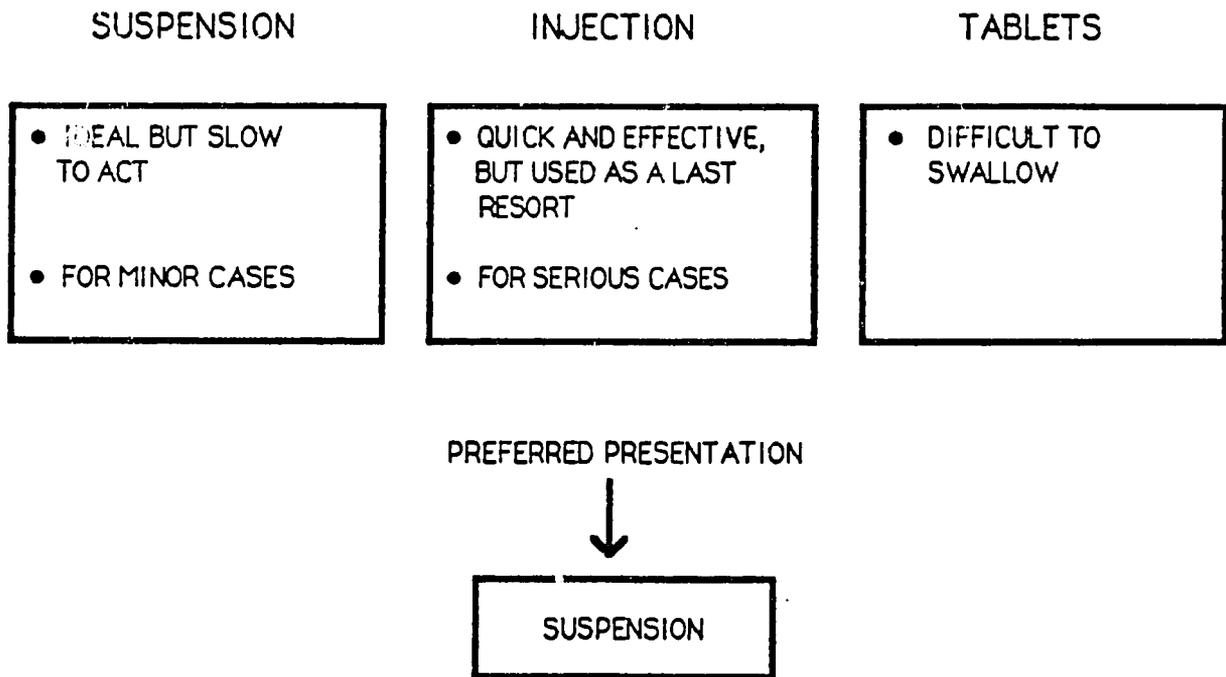
* They normally wait 24 hours for the medicine to take effect and for notable improvements to take place. They do, however, expect a degree of improvement after the first couple of hours.

TABLE 16

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

OPINIONS ON THE PRESENTATIONS OF INFANTILE
DIARRHEA PRODUCTS *



* Most of the groups agreed with these opinions

TABLE 17

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

APPROXIMATE COST OF DRUGS TO TREAT A
DIARRHEA ATTACK *

CITY:	WORKING CLASS	MIDDLE CLASS
MEXICO CITY	\$40,000 TO \$50,000	UP TO \$50,000
MEXICO CITY	\$50,000 TO \$60,000	UP TO \$30,000
VILLAHERMOSA	\$30,000 TO \$50,000	UP TO \$50,000 **
VILLAHERMOSA	UP TO \$50,000	

ON AVERAGE

\$50,000

HOW THEY SEE THIS EXPENDITURE

- SINCE THEIR CHILDREN'S HEALTH IS INVOLVED, THE COST DOES NOT MATTER
- IT IS A MAJOR ITEM OF EXPENDITURE, AFFECTING THE DOMESTIC BUDGET
- IT IS NOT A MAJOR ITEM OF EXPENDITURE UNLESS THE ILLNESS IS PROLONGED ***

* These figures do not include doctors' fees

** Two groups expressed this opinion

*** Opinion expressed by one middle-class group (Villahermosa)

TABLE 18

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

KNOWLEDGE ABOUT ORAL REHYDRATION SALTS

- USED TO REPLACE LIQUIDS
- DO NOT CURE DIARRHEA, JUST REHYDRATE
- ONLY LAST 24 HOURS
- ACT QUICKLY, EFFECTIVE
- CAN BE GIVEN FOR DIARRHEA, PROFUSE SWEATING OR COLDS

TABLE 19

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

BELIEFS ASSOCIATED WITH ORAL REHYDRATION SALTS

- NOT MEDICINE, NOT HARMFUL
- CAN BE USED INSTEAD OF DRINKING WATER
- RECOMMENDABLE FOR ADULTS
- RECOMMENDED INSTEAD OF WATER FOR ATHLETES
- CAN BE USED TO SUBSTITUTE MILK OR FOOD
- EXCESS USES CAUSES FLUID RETENTION

TABLE 20

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

IDEAS REGARDING THE CONTENTS OF
ORAL REHYDRATION SALTS

- VITAMINS (A, B, C)
- VITAMINS FOR BONE DEVELOPMENT
- POTASSIUM
- IRON
- PHOSPHOROUS
- SODIUM/SALT
- SALTS
- MINERALS
- SUGAR
- COLORING
- ARTIFICIAL FLAVOR (COLORED PEDIALYTE)
- WATER, SUGAR, SALT
- ELECTROLYTES

VITAMIN-ENRICHED

NUTRITIOUS

TABLE 21

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

HOME-MADE SERUMS

- APPLE SODA WITH MINERAL WATER
- BOILED WATER, LEMON, SALT
- BOILED WATER, SALT, SUGAR
- COMMERCIAL ORS MIXED WITH SODA
- COCA-COLA WITH MINERAL WATER *

* Used to stop diarrhea as well as for rehydration

TABLE 22

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

COMMERCIAL ORAL SERUM VS. HOME-MADE SERUM

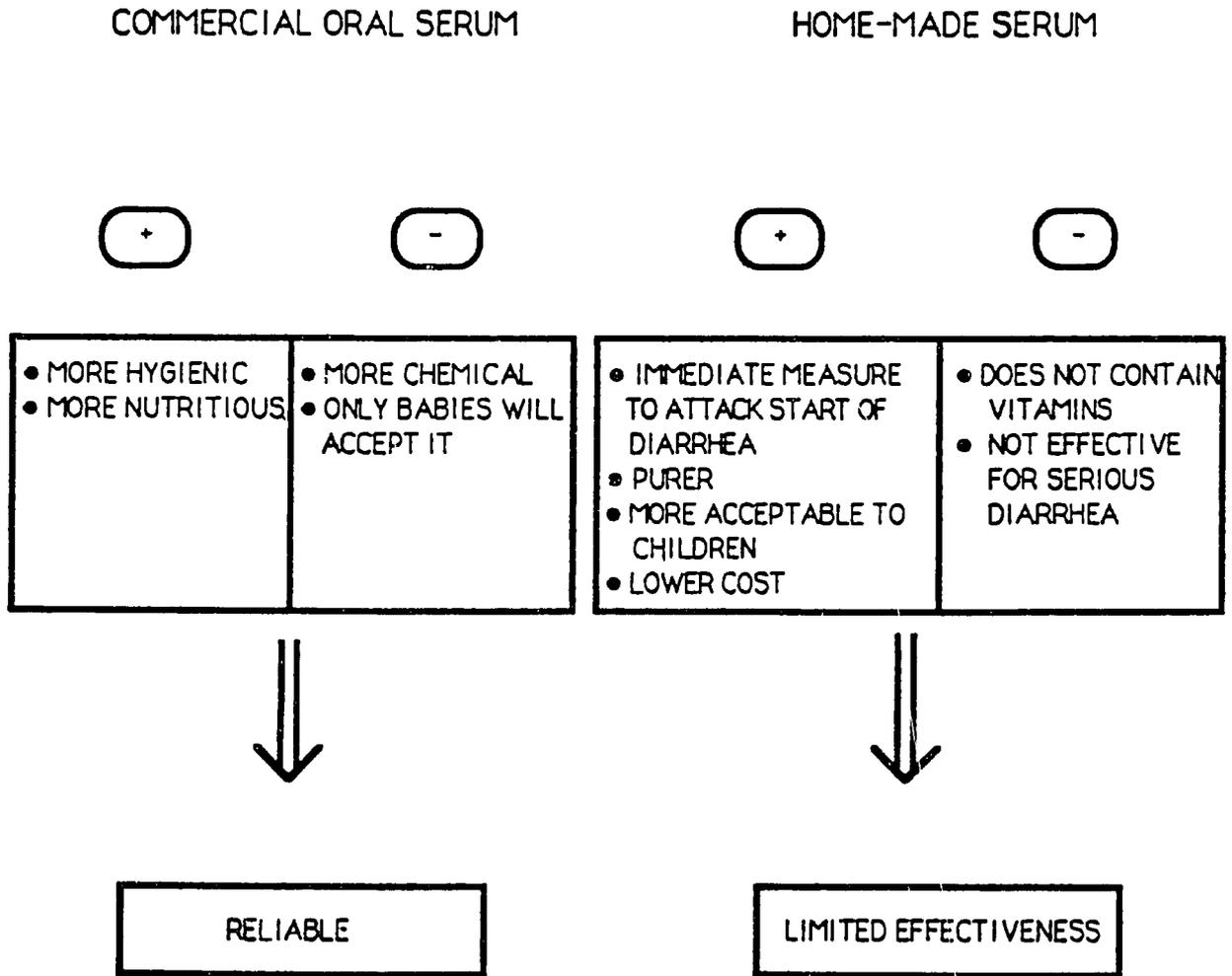
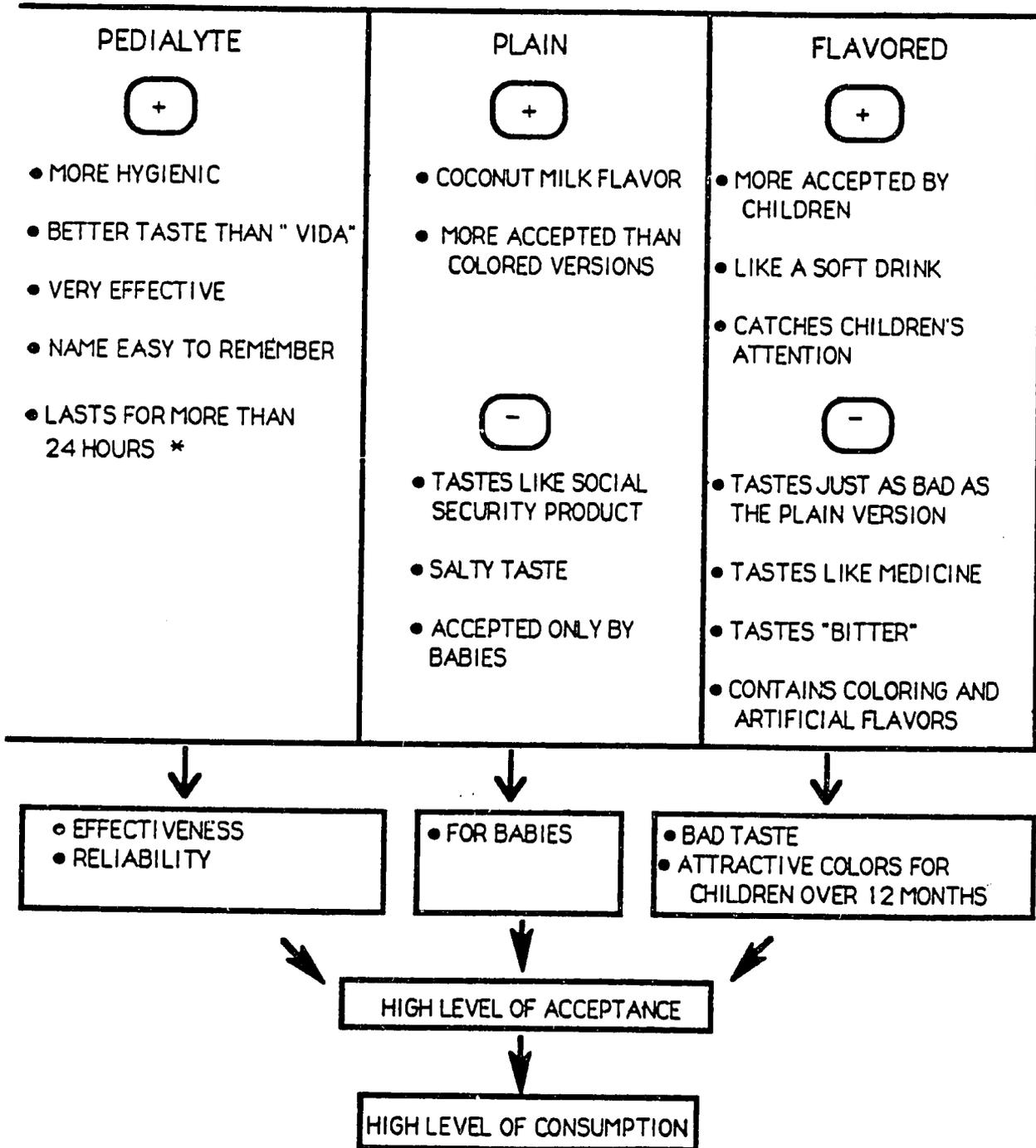


TABLE 23

ORAL REHYDRATION SALTS AND THERAPY
 CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

OPINIONS ON PEDIALYTE



* Opinion of one working-class in Mexico City

TABLE 24

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

OPINIONS ON VIDA SUERO ORAL

+	-
<ul style="list-style-type: none">• CONTAINS NECESSARY ELECTROLYTES• PRACTICAL, COMPACT	<ul style="list-style-type: none">• TASTES "HORRIBLE"• SALTIER THAN PEDIALYTE• COMPLICATED PREPARATION• FEAR OF INCORRECT PREPARATION IN AN EMERGENCY• MISTRUST OF STATE HEALTH SERVICES, MISTRUST OF PRODUCT• IMPRACTICAL IN EMERGENCIES

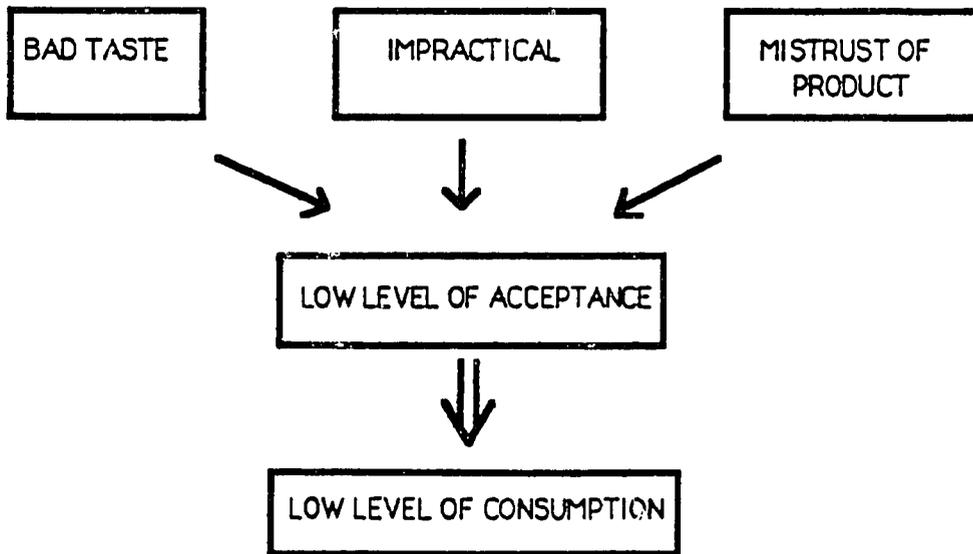


TABLE 25

ORAL REHYDRATION SALTS AND THERAPY
 CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

DOSAGES OF SERUM

PEDIALYTE	VIDA
<ul style="list-style-type: none"> ● AS MUCH AS THE CHILD WANTS * ● TWO OUNCES PER EVACUATION ● FOUR OUNCES ● FOUR OR FIVE OUNCES; HALF WATER, HALF SERUM 	<ul style="list-style-type: none"> ● FIVE SPOONFULS EVERY HOUR AND A HALF ● ONE TEASPOONFUL EVERY FIVE MINUTES ● TWO OUNCES OR HALF A SMALL GLASS EVERY 30 MINUTES ● TWO OUNCES AFTER EVERY EVACUATION ● AS MUCH AS THE CHILD WILL TAKE, WITHOUT MEASURING *

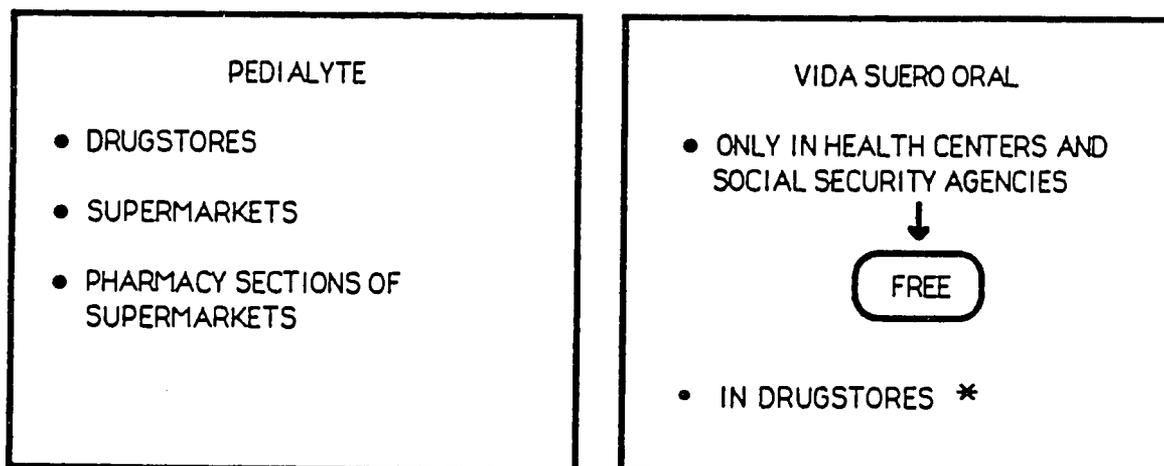
* Opinion expressed by two middle-class groups in Mexico City and Villahermosa and one working-class group in Mexico City

TABLE 26

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

WHERE ORAL REHYDRATION SALTS ARE PURCHASED



* Mentioned only by the middle class in Mexico City

TABLE 27

ORAL REHYDRATION SALTS AND THERAPY
 CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

ORS IN A BOTTLE OR SACHET
 PREFERENCES

BOTTLE (PREPARED SOLUTION)	SACHET (DRY SALTS)
<ul style="list-style-type: none"> ● PRACTICAL BOTTLE ● PRACTICAL FOR TRAVELING ● MORE CONFIDENCE ● CLEANER ● ATTRACTIVE CONTAINER ● KEEPS LONGER * 	<ul style="list-style-type: none"> ● IMPRACTICAL WHEN OUTSIDE THE HOUSE ● NEED TO WAIT FOR IT TO COOL ● PROBLEMS CALCULATING ONE LITER ● TAKES UP LITTLE SPACE



PRACTICAL



IMPRACTICAL

* Opinion linked to the belief that Pedialyte lasts longer than 24 hours because it comes in a bottle (one working-class group in Mexico City)

TABLE 28

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

PRESENTATION OF VIDA SUERO ORAL

IMMEDIATELY IDENTIFIED AS THE
SOCIAL SECURITY PRODUCT

IDENTIFIED AS THE PRODUCT
WITH AN UNPLEASANT TASTE
FOR THE CHILDREN

IDENTIFIED AS THE PRODUCT
PUBLICIZED BY THE HEALTH
AUTHORITIES ON TV, BUT DIFFERENT
FROM THE ONE DISTRIBUTED
GRATIS IN HEALTH CENTERS *

IDENTIFIED AS THE PRODUCT
DISTRIBUTED AS CHOLERA
PROTECTION IN RURAL AREAS
AROUND VILLAHERMOSA

IDENTIFIED AS THE PRODUCT
PUBLICIZED BY THE
CANTINFLAS CARTOON ON
TELEVISION

* Mentioned in one middle-class and one working-class group in Villahermosa

EVALUATION OF THE DESIGN OF VIDA SUERO ORAL

HIGH IMPACT → HIGH ACCEPTANCE

DESIGN

- PLEASANT TASTE
- STRIKING/ATTRACTIVE
- CHEERFUL COLORS
- DEPICTING PLEASANT USE

IMAGE

- CHEERFUL BABY
- HEALTHY CHILD, FULL OF ENERGY
- HEALTHY ENVIRONMENT
- FRESHNESS
- TREE OF LIFE

PACKAGING

- IDENTIFICATION WITH CANDY OR KOOL-AID
- RESISTANT PACKAGING *
- WATER-RESISTANT PACKAGING *
- PRACTICAL/COMPACT
- PRACTICAL FOR THE HOME



MESSAGE OF LIFE
DEPICTING HEALTH

ATTRACTIVE DESIGN

* Opinion of the Villahermosa middle class

TABLE 30

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

PRESENTATION OF PEDIALYTE

IDENTIFIED AS A PRACTICAL PRODUCT *	IDENTIFIED AS PRODUCT IN NEW PLASTIC BOTTLE	IDENTIFIED AS PRODUCT IN NEW HALF-LITER PRESENTATION
IDENTIFIED AS PRODUCT THAT IS WASTED BECAUSE OF CONTAINER SIZE	IDENTIFIED AS PEDIALYTE BRAND, BUT NOT IN TRANSPARENT, FLAVORLESS PRESENTATION **	

* Opinion expressed by all the groups

** Middle-class group in Villahermosa

TABLE 31

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

EVALUATION OF THE DESIGN OF PEDIALYTE

MEDIUM IMPACT → HIGH ACCEPTANCE

DESIGN

- MEDICAL IMAGE
- "COMPLETE" PRODUCT
- NOT ATTRACTIVE FOR CHILDREN
- SIMILAR TO OTHER LIQUIDS (IRONING WATER)

BOTTLE	LABEL	NATURAL PEDIALYTE
<ul style="list-style-type: none"> + PRACTICAL <ul style="list-style-type: none"> • WILL NOT BREAK • HALF-LITER SIZE, NO WASTE • PRACTICAL WHEN OUTSIDE THE HOME • CAN BE REUSED + HYGIENIC + SAFE, RELIABLE, CONTAMINATION-FREE CAP + ATTRACTIVE - CAP DIFFICULT TO REMOVE - WOULD PREFER A SMALLER BOTTLE 	<ul style="list-style-type: none"> - UNATTRACTIVE, VERY SIMPLE + LOOKS LIKE MEDICINE, INSPIRES CONFIDENCE - LOOKS LIKE MEDICINE, CHILDREN RELUCTANT TO DRINK IT 	<ul style="list-style-type: none"> + NO COLOR OR CHEMICALS + MORE HYGIENIC

UNATTRACTIVE DESIGN

PRACTICAL

TABLE 32

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

ESTIMATED PRICE OF PEDIALYTE

GROUP	PRICE	OPINION
MIDDLE CLASS, MEXICO CITY	\$5,000.00	• EXPENSIVE, BECAUSE OF BOTTLED PRESENTATION; CONTAINS LESS THAN A LITER
MIDDLE CLASS, MEXICO CITY	\$5,000.00	• EXPENSIVE, MUCH IS WASTED
MIDDLE CLASS, VILLAHERMOSA	\$7,000.00	• OK, EXPENSIVE FOR LOWER CLASS
MIDDLE CLASS, VILLAHERMOSA	\$6,000.00	• REASONABLE
WORKING CLASS, MEXICO CITY	\$6,000.00	• EXPENSIVE, WASTAGE, UNPLEASANT TASTE
WORKING CLASS, MEXICO CITY	\$9,000.00	• OK, EXPENSIVE FOR POOR PEOPLE
WORKING CLASS, VILLAHERMOSA	\$5,000.00	• REASONABLE
WORKING CLASS, VILLAHERMOSA	\$4,500.00	• REASONABLE

TABLE 33

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

RASONABLE PRICES FOR A NEW SERUM *

GROUP	PRICE	OPINION
MIDDLE CLASS, MEXICO CITY	\$1,500 TO \$2,000	• TO STAY CLOSE TO THE PRICE OF VIDA SUERO ORAL
MIDDLE CLASS, MEXICO CITY	\$2,000 TO \$2,500 (250 ml)	• BECAUSE OF WASTAGE
MIDDLE CLASS, VILLAHERMOSA	\$4,000	• TO KEEP IT ACCESSIBLE FOR EVERYONE
MIDDLE CLASS, VILLAHERMOSA	\$6,000	• ONLY IF IT HAS THE SAME PROPERTIES AS PEDIALYTE
WORKING CLASS, MEXICO CITY	\$6,000	• ONLY IF IT HAS A PLEASANT TASTE, PREVENTS DEHYDRATION, AND IS NUTRITIOUS
WORKING CLASS, MEXICO CITY	\$5,000 TO \$6,000	• TO MAKE IT ACCESSIBLE TO PEOPLE WITH LOW INCOMES
WORKING CLASS, VILLAHERMOSA	\$4,000 TO \$5,000	• ACCESSIBLE
WORKING CLASS, VILLAHERMOSA	\$4,500	• ACCESSIBLE

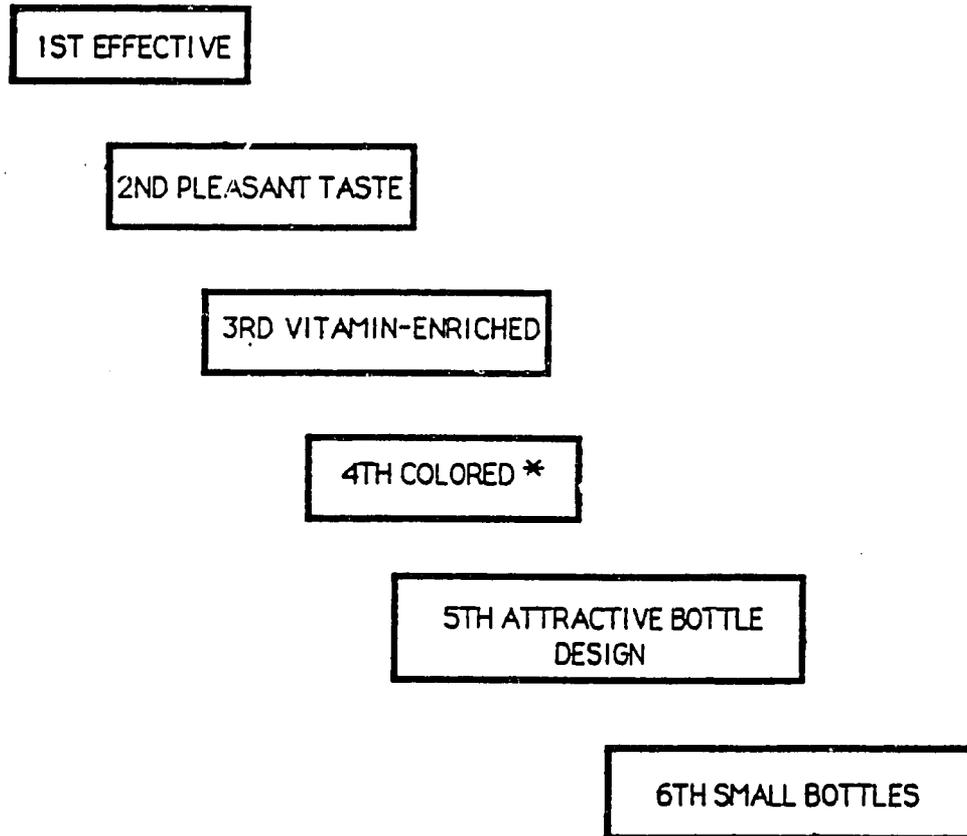
ACCEPTABLE RANGE
\$4,000 TO \$6,000

* The price indicated by the mothers is for a 500 ml presentation, similar to Pedialyte

TABLE 34

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

SUGGESTED PROPERTIES FOR A NEW SERUM



* One middle-class group in Mexico City said color was the most important element

TABLE 35

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

PICTURES FOR THE LABEL OF A NEW ORS PRODUCT

- CHILD:
 - PLAYING WITH A PET
 - DRINKING A GLASS OF WATER
 - CRAWLING
 - WITH BOTTLE AND DIAPER
 - CHARACTERS
 - WOOD
 - BLUE SKY
 - MOUNTAIN
 - SPRING
 - COLORS:
 - STRIKING/CHEERFUL
 - REDS
 - BLUES
 - PINK AND BLUE
- SIMILAR TO THE VIDA SUERO ORAL SACHET

TABLE 36

ORAL REHYDRATION SALTS AND THERAPY

CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

NAMES AND ASSOCIATED IDEAS FOR A NEW ORS

NAMES

- "VIDA Y ENERGIA"
- "VIDA Y SALUD PARA LOS NIÑOS"
- "AGUA Y VIDA"
- "HIDROBOY"
- "SUPER SUERO"
- "HIDROPEDIAL"

ASSOCIATED IDEAS

- ASSOCIATED WITH:
- LIFE
 - ENERGY
 - HEALTH
 - WATER
 - HYDRO
 - HYDRO AND CHILD
 - WATER AND CHILD
 - NAME OF CARTOON CHARACTER

TABLE 37

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

EVALUATION OF THE TEXT "ORAL REHYDRATION SERUM"

CHOSEN BY:

1 WORKING-CLASS GROUP IN VILLAHERMOSA

→ DID NOT UNDERSTAND "ORAL"

1 MIDDLE-CLASS GROUP IN VILLAHERMOSA

→ YOU JUST READ IT AND YOU
KNOW WHAT IT DOES

OPINION OF OTHER GROUPS

→ THE WORD "ORAL" IS NOT
COMPREHENSIBLE TO EVERYONE

EVALUATION OF THE TEXT "REPLACES LIQUIDS,
HELPS STOP DIARRHEA"

CHOSEN BY:

2 WORKING-CLASS GROUPS IN VILLAHERMOSA	→	• NOT QUESTIONED: IF THE TEXT SAYS IT HELPS STOP DIARRHEA, THEN THE PRODUCT MUST INDEED DO SO
1 WORKING-CLASS GROUP IN MEXICO CITY	→	• BELIEVABLE ONLY IF IT CONTAINS A NEW SUBSTANCE TO HELP PREVENT DIARRHEA • BELIEVABLE, SUBJECT TO TESTING THE PRODUCT
OPINION OF OTHER GROUPS	→	• NOT BELIEVABLE: IT ONLY REPLACES LIQUIDS AND DOES NOT CURE DIARRHEA • NOT BELIEVABLE: IT ONLY CONTROLS DIARRHEA • ONLY BELIEVABLE IF IT CONTAINS SOME NEW SUBSTANCE • COULD CREATE PROBLEMS FOR PEOPLE WHO THINK THEY ARE CURING THE DIARRHEA

EVALUATION OF THE TEXT "PREVENTS DEHYDRATION
CAUSED BY DIARRHEA"

CHOSEN BY:

1 WORKING-CLASS GROUP IN MEXICO CITY
2 MIDDLE-CLASS GROUPS IN MEXICO CITY



- CREDIBLE BECAUSE IT DOES PREVENT DEHYDRATION
- SHORT TEXT
- CAN BE UNDERSTOOD BY ANYONE

OPINION OF OTHER GROUPS



- THERE ARE OTHER CAUSES OF DEHYDRATION BESIDES DIARRHEA
- TEXT IS "COLD"
- IT IS "WORDY": POOR PEOPLE WILL NOT UNDERSTAND IT
- CAN BE UNDERSTOOD AS IMPLYING PRODUCT IS TO BE USED BEFORE DIARRHEA STARTS

EVALUATION OF THE TEXT "TO REPLACE LIQUIDS
LOST THROUGH DIARRHEA"

CHOSEN BY:

1 WORKING-CLASS GROUP IN MEXICO CITY
1 WORKING-CLASS GROUP IN VILLAHERMOSA
1 MIDDLE-CLASS GROUP IN VILLAHERMOSA



- CLEAR FOR ALL SOCIAL CLASSES
- EXPLAINS WHAT THE SOLUTION DOES
- USES SIMPLE WORDS

OPINION OF OTHER GROUPS



- TEXT IS LONG AND "WORDY"
- LONG TEXT, WITH SAME CONTENT AS OTHER SHORTER ONES
- FLUIDS ARE ALSO LOST THROUGH VOMITING OR EXCESSIVE PERSPIRING AS WELL AS DIARRHEA

TABLE 41

ORAL REHYDRATION SALTS AND THERAPY
CONSUMER KNOWLEDGE, ATTITUDE AND PRACTICE

TEXT BEST UNDERSTOOD BY ALL SOCIAL GROUPS

"TO REPLACE LIQUIDS LOST THROUGH DIARRHEA"

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- UNDERSTOOD BY LOWER CLASS MOTHER IN BOTH CITIES
- USES SIMPLE WORDS

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- MIDDLE-CLASS PARTICIPANTS THOUGHT THE TEXT WAS LONG
- DOES NOT INCLUDE EXCESSIVE PERSPIRATION AS AN IMPORTANT CAUSE OF FLUID LOSS (MIDDLE-CLASS VILLAHERMOSA)

SUGGESTIONS FOR TEXTS

SUGGESTIONS	REASONS
• DO NOT USE THE WORD "ORAL"	→ • NOT EVERYBODY UNDERSTANDS IT
• DO NOT USE THE WORDS "HYDRATION" AND "DEHYDRATION"	→ • WORKING-CLASS PEOPLE MAY NOT UNDERSTAND THEM
• DO NOT USE TEXTS THAT ARE TOO SHORT	→ • NOT SUFFICIENTLY EXPLICIT, PARTICULARLY FOR LOWER CLASSES
• DO NOT CLAIM THAT THE PRODUCT HELPS STOP DIARRHEA	→ • WILL LEAD TO MISTRUST OF THE PRODUCT