Understanding instructions for oral rehydration therapy

Oral rehydration mixtures are readily available in rural Kenya, but the instructions that accompany them are not always clear. Mothers will understand such instructions more readily if they explain the principles of oral rehydration and describe in a logical way the sequence of procedures to be followed.

Premixed salts for oral rehydration therapy (ORT) are available in many parts of rural Kenya, where they are sold by the packet in dukas or small shops that stock canned goods, cooking utensils, tobacco, soft drinks, and pharmaceutical products. In 1986, at least five kinds of ORT packets were being sold in the country. The printed instructions that accompanied the products were usually in English, and only one kind was sold with a Kiswahili translation.

Information about ORT preparation and administration is normally obtained in one of two ways: (1) a study by the purchaser of the printed instructions and illustrations contained on the packet, and (2) an oral explanation of the instructions by the seller. A February 1986 survey of 30 dukas located in and around the town of Kajiado, 80 km south of Nairobi, indicated that 13 of them distributed ORT packets and that only one brand was available. Sellers were asked to read the instructions for the brand available and explain how to prepare and administer the solutions to an infant. Sellers usually searched the text for information as to the frequency of administration (“You mix and give two or three times”), without noting that the amount of liquid and frequency vary with the age and size of the child, or that a child should be given more fluid at the beginning of treatment, or that treatment should continue for more than one day.

Two experiments were designed to assess the way in which educated mothers deal with the information contained in the printed instructions (1). The product required mothers to perform a number of procedures involving measuring, mixing, and administering the ORT solution in recommended quantities to a sick child. These, in turn, depended on the recognition by mothers of the various stages of diarrhoeal dehydration, the need to intervene at an early stage, and the need to maintain hydration and nutrition during recovery. In sum, what is needed is knowledge of how the medicine is supposed to work in treating diarrhoeal dehydration
and the capacity to make inferences from this knowledge. The experiments were carried out in Kajiado with 40 randomly selected Masai mothers with a minimum of six years of primary schooling. All had previous knowledge of oral rehydration therapy and had used premixed ORT packets.

**Understanding the instructions**

Two texts were used for the first experiment, one of which was the printed information in English as given by the manufacturer, along with the graphic information that appeared on the packet. The second text was a Kiswahili translation. The text was not translated into Maa because that language is seldom used in print.

Mothers were requested to describe the illustrations and to read the instructions for the product aloud. Seven questions were asked in Maa (the first language of the subjects) to examine comprehension.

Scores were given for the correctness of responses. The comprehension scores for the number of reasons. Some of the words and units of measurement were unfamiliar, and the frequency of administration was presented in a way that required the user to make very difficult calculations of the amount to be administered. Furthermore the procedures for preparing the mixture in the printed text did not follow any logical order, nor were the precautions to be taken listed in order of their importance to the user.

When mothers had problems in comprehension it was usually because they lacked the knowledge needed to “make sense” of the instructions. For example, many mothers felt that the mixture should be added to water prior to boiling, disregarding the printed instructions which provide no explanation of this procedure. More serious difficulties were encountered in reconciling information about the maximum number of administrations in any 24-hour period with advice to give babies boiled and cooled water whenever they appeared to be thirsty.

While no instructions can be designed well enough to close gaps in knowledge, there is much scope for improving their construction. We have found that good graphics are very effective in communicating information about the sequence of procedures used in preparing and administering medicines. Unfortunately, some information cannot be communicated with graphics — information on correct dosage and precautions, for example.

**Revised instructions**

A second experiment was designed to examine the effect of changing the wording of the text, simplifying the factual information, using colloquial vocabulary and familiar units of time and measurement, and arranging information into a chronological

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10 subjects given the English texts were low — a mean of 52 out of a possible 70. Those receiving the Kiswahili texts did not score significantly higher, however, with a mean of 53. The mothers found the printed instructions difficult to understand for a
or substantive hierarchy of tasks. In addition, we sought to improve the texts by incorporating explanations of treatments and individual procedures that are likely to “make sense” in terms of prior knowledge obtained from schooling or social experience. For example, instructions to continue feeding were combined with an explanation that the sick child needs energy to get better. This is the rationale that Masai mothers give for mixing herbal medicines with fat and other foods.

Twenty mothers who received instructions in English and Kiswahili achieved higher scores for their answers to the seven comprehension questions. The ten who were given the English texts, for instance, obtained near perfect scores, with a mean of 66 out of 70. The lexical and semantic characteristics of the original and revised texts were examined to determine how the information in them was presented (2). The original and revised instructions were found to be similar in complexity. In both, essential information was embedded in many conditional statements requiring the reader to reconstruct information. The principal difference was that the revised texts offered more explanation of the sequence of procedures, which facilitated memorizing and recall.

Mothers’ responses were analysed in terms of the proportion of propositions recalled or inferred from the texts compared with the information obtained from the illustrations and other sources. Mothers who received the original text made little use of the information it provided. Only 40% of the propositions they recalled or inferred were derived from the printed instructions. Mothers who received the revised text, however, derived almost all the information they needed from it. It supplied 95% of the propositions they used. Moreover, all these mothers correctly answered four of the five questions that depended on recalling or making inferences from the text.

References

How to treat diarrhoea at home

1. AS SOON AS DIARRHOEA STARTS, GIVE YOUR CHILD MORE FLUIDS THAN USUAL TO PREVENT DEHYDRATION. SUITABLE FLUIDS INCLUDE:
   • the recommended home fluid or food-based fluids, such as gruel, soup, or rice water.
   • breastmilk, or milk feeds prepared with twice the usual amount of water.

2. GIVE YOUR CHILD FOOD
   • which is freshly prepared, for example, mixes of cereal and beans, or cereal and meat or fish. Add oil to food if possible.
   • fresh fruit juices or bananas.
   • as much as the child wants, 6 or more times a day.
   • which is cooked and mashed or ground well so it will be easier to digest.
   • after the diarrhoea stops, one extra meal each day for a week.

3. TAKE YOUR CHILD TO THE HEALTH WORKER IF THE CHILD:
   • passes many stools
   • is very thirsty
   • has sunken eyes
   • has a fever
   • does not eat or drink normally
   • seems not to be getting better.

4. YOU CAN PREVENT DIARRHOEA BY:
   • giving only breastmilk for the first 4-6 months and continuing to breastfeed for the first year.
   • introducing clean, nutritious weaning foods at 4-6 months.
   • giving your child freshly prepared and well-cooked food and clean drinking water.
   • having all family members wash their hands with soap after defecating and before eating or preparing food.
   • having all family members use a latrine.
   • quickly disposing of the stool of a young child in a latrine.

From The treatment and prevention of acute diarrhoea. Practical guidelines. 2nd edition, 1989, published by the World Health Organization, Geneva; price, Sw.fr. 11/US$8.80. The illustrated instructions on this page are also available in larger print as a mother’s card, which can be obtained from the Diarrhoeal Diseases Control Programme, World Health Organization, 1211 Geneva 27, Switzerland.