

Attitudes of Bolivian Pharmacists in Dealing with Diarrhea Cases¹

ADALID D. ZAMORA GUTIÉRREZ,² ANA MARÍA AGUILAR LIENDO,³
& DILBERTH CORDERO VALDIVIA³



To help learn about the recommendations made by Bolivian pharmacists dealing with diarrhea cases, 498 pharmacies in three Bolivian cities (Cochabamba, El Alto, and La Paz) were visited by female interviewers who indicated they were seeking treatment for a child with diarrhea. Ninety-eight of the Cochabamba pharmacies were also visited by a male interviewer who indicated he was suffering from diarrhea and was seeking treatment. In response, fewer than 2% of the pharmacists recommended using oral rehydration salts (ORS), increasing fluid intake, or consulting a physician. Most recommended antimicrobials, antidiarrheals, or some combination of the two. At 329 (66%) of the pharmacies, oral rehydration salts were unavailable, and those that did have such salts rarely offered them to customers. At the time of the survey, pharmacists were not integrated into the Bolivian National Health Secretariat's training program for control of diarrheal diseases. Steps have since been taken to resolve this matter.

Diarrheal disease continues to constitute the leading cause of childhood mortality in Bolivia. It has been estimated that 35% of all deaths occurring among children under 5 years of age are attributable to diarrheal processes (1).

Most cases of diarrhea can be treated by oral rehydration therapy (ORT), an approach promoted by the World Health Organization (WHO) for more than a decade (2) that is included in Bolivia's national child care guidelines.

ORT entails increasing the patient's intake of fluids (including oral rehydration salts—ORS), maintaining feeding (with

particular emphasis on breast-feeding), and providing appropriate counseling to family members (or to the patient if he or she is an adult). Use of antimicrobials is indicated solely for cases of dysentery or cholera (3).

Application of the above measures has been associated with a marked decline in diarrhea mortality around the world (4). Unfortunately, despite ORT's widespread availability, there are still population sectors where this therapy is little used, partly as a result of misinformation. It seems likely that such misinformation is reinforced at times by poor management of acute diarrhea cases by health service providers (5).

According to the 1992 Population and Housing Census, Bolivians seek care for health problems from private or institutional health centers, pharmacies, and traditional healers, in that order of preference (6), a situation similar to that found in many other countries. However, for reasons of cost, convenience, and other factors, a mother whose child develops diarrhea will often seek assistance from

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²El Alto Regional Health Secretariat, La Paz, Bolivia.

³BASICS (Basic Support for Institutionalizing Child Survival), Hospital del Niño, La Paz, Bolivia.

a pharmacy before going to a health center (7).

A number of studies conducted both in Bolivia (8) and elsewhere (9–11) have shown that pharmacists had inadequate knowledge of ORT and did not consider rehydration as a primary treatment for managing patients with acute diarrhea. Given the likelihood that large numbers of mothers receive advice in pharmacies, it is important to ensure that the recommendations provided by pharmacists are both appropriate and consistent with National Health Secretariat guidelines.

To support development of a strategy for training pharmacists about proper treatment of acute diarrhea, an advance effort was made to clearly define the prevailing attitudes of those professionals in three Bolivian cities. This article describes the results of that effort.

METHODOLOGY

The work involved, which was carried out in July 1993, sought to include all registered pharmacies in the cities of La Paz, El Alto, and Cochabamba. In each city, one female interviewer in a team of three visited each pharmacy claiming to be the mother of a child less than 3 years old with liquid diarrhea. The interviewer would ask the pharmacist to recommend treatment, indicating that the case was without complications and had a duration of less than three days.

In view of the presence of cholera in Cochabamba, the survey team for that city also included a male interviewer who claimed he was suffering from diarrhea and likewise requested the pharmacist's advice.

The interviewers were instructed that they should allow the pharmacist to suggest medications freely and should later ask about the cost. In the event that oral rehydration salts were not suggested spontaneously, the interviewers were told to inquire about their availability and cost.

Once outside the pharmacy, they were to record the information given.

Any of the following recommendations were classified as reflecting a correct approach: increase consumption of fluids, administer rehydration salts, or refer the patient to a health service.

RESULTS

The survey included a total of 498 pharmacies (276 in La Paz, 28 in El Alto, and 194 in Cochabamba) representing 81.6% of all registered pharmacies in the selected health units. The remaining 18.4% were not included because they were closed at the time of the interviewer's visit. In Cochabamba, 98 of the 194 pharmacies were visited a second time, this time by the male interviewer reporting a case of adult diarrhea. As a result, the total number of visits made was 596.

In 10 (1.7%) of the visits, a correct recommendation was made. In 586 (98.3%) of the visits antimicrobials, antidiarrheals, or both types of medication were initially recommended. In 33 of the latter visits (5.5% of the total), the interviewer was also advised to consult a physician or administer oral rehydration salts.

In those 586 cases where medications were recommended, the pharmacists suggested one or more in a range of 50 different brand-name products. The medications recommended, classified by pharmacologic category (antibiotics, antidiarrheals, combined preparations, and others), are shown in Table 1. Of the 1 067 items offered, a price was given for 901; the price distribution of these 901 items by class of preparation is shown in Table 2.

Of the 498 pharmacies, 169 (34%) had oral rehydration salts available while 329 (66%) did not. However, the pharmacist offered oral rehydration packets to the interviewer at only 15 (9%) of the 169 pharmacies where they were available. The percentage of pharmacies with oral

Table 1. Medications recommended for treating acute diarrhea by the pharmacists surveyed in the Bolivian cities of La Paz, El Alto, and Cochabamba.

| Class of medication, active ingredient | No. | % |
|---|-------|------|
| <i>Antibiotics:</i> | 203 | 19.0 |
| Ampicillin | 21 | 2.0 |
| Amoxicillin | 5 | 0.5 |
| Chloramphenicol | 15 | 1.4 |
| Co-trimoxazole | 157 | 14.7 |
| Erythromycin | 3 | 0.3 |
| Metronidazole | 2 | 0.2 |
| <i>Antidiarrheals:</i> | 280 | 26.3 |
| Kaolin-pectin | 227 | 21.3 |
| Loperamide | 53 | 5.0 |
| <i>Combined preparations:</i> | 524 | 49.1 |
| <i>Other medications.</i> | 60 | 5.6 |
| <i>Total</i> | 1 067 | 100 |

rehydration salts was considerably greater in Cochabamba (68%) than it was in the other two cities (4–5%).

In 74 instances (12%), the pharmacists recommended other action. Some of these actions, such as increasing fluid intake (in 47 cases), seemed positive; while others, such as suspending breast-feeding (in 3 cases) or placing the patient on a diet (in 11 cases), had negative implications. There were also some cases (13) in which inappropriate comments were made about oral rehydration salts, such as “they are only good for cholera”; “they are only distributed in mothers’ clubs or groups”; “they are useless”; etc.

The recommendations obtained at the Cochabamba pharmacies visited by both female and male interviewers are shown in Table 3, which provides a comparison

Table 2. Cost per treatment of the medications recommended by the pharmacists surveyed in Cochabamba, El Alto, and La Paz, by class of medication.

| Type of product | Price (US\$) | | | | | |
|-----------------------|--------------|----|-------------|----|---------|----|
| | <\$2.00 | | \$2.00–4.00 | | >\$4.00 | |
| | No. | % | No. | % | No. | % |
| Antibiotics | 4 | 2 | 0 | 0 | 168 | 98 |
| Antidiarrheals | 11 | 4 | 9 | 4 | 223 | 92 |
| Combined preparations | 73 | 16 | 94 | 21 | 278 | 62 |
| Others | 10 | 24 | 9 | 22 | 22 | 54 |
| <i>Total</i> | 98 | | 112 | | 691 | |

Table 3. A comparison of recommendations for adult and child diarrhea treatment by pharmacists in Cochabamba who were visited twice. Not all the data from two pharmacies were recorded correctly, and these latter data were excluded from the analysis.

| Recommendations | Adults | Children | χ^2 | P |
|----------------------------|--------|----------|----------|--------|
| See the doctor | 1/97 | 5/97 | 2.7 | 0.098 |
| Increase fluid intake | 8/97 | 16/97 | 3.0 | 0.080 |
| Antibiotics | 3/96 | 21/96 | 15.4 | <0.001 |
| Combined preparations | 63/96 | 49/96 | 4.2 | 0.040 |
| Products most recommended: | | | | |
| Loperamide | 16/96 | 6/96 | 5.1 | 0.020 |
| Cotrimoxazole | 3/96 | 16/96 | 9.8 | 0.001 |
| Streptocarbocetazazole* | 46/96 | 32/96 | 4.2 | 0.040 |

*Antidiarrheal plus antibiotic.

of the recommendations made for children and for adults.

DISCUSSION AND CONCLUSIONS

The general survey method used (based on simulation of an acute diarrhea case) has been employed in other countries (7, 9, 10) and appears to offer the most reliable method currently available for learning about pharmacists' recommendations for dealing with such cases.

The number of pharmacies surveyed (498) accounted for more than 80% of the pharmacies operating in the three study cities and considerably exceeded the numbers included in similar surveys conducted in Sudan (63 pharmacies) (10); Great Britain (20 pharmacies) (7); and Sri Lanka, Bangladesh, and Yemen (75 pharmacies) (11).

The percentage of pharmacists recommending fundamentally correct management of the case was substantially lower than that found in other surveys, where an appropriate course of action was recommended between 14% and 30% of the time (7, 9, 10). One likely reason for this situation was prior exclusion of the important pharmacy sector from Bolivia's Diarrheal Disease Control Program training process.

Antidiarrheals, both by themselves and in combination, were the medications recommended with the greatest frequency, followed by antibiotics (see Table 1). None of these recommendations can be justified on the basis of current norms for managing watery diarrhea. This finding is similar to those of surveys conducted in other countries, in which kaolin-pectin suspension was the medication most often recommended (12, 13). Medications of this latter type, which likewise are not recommended, are still registered with the National Department of Medications, Pharmacies, and Laboratories of the Bo-

livian National Health Secretariat (14), a situation that is currently under review.

The reason for the large supply of antidiarrheal medications in pharmacies is most likely commercial in nature, since according to a 1985 survey conducted in Bolivia, between 34% and 50% of all pharmacy income is provided by the sale of such products (12). This finding appears significant and could prove applicable to the pharmaceutical trade in other countries.

The price of the products recommended varied considerably. Combined preparations (which were those recommended most frequently) were observed to have a wide range of prices that placed them "within reach of every pocketbook."

In addition, the widespread absence of oral rehydration salts from the pharmacies surveyed in La Paz and El Alto should be noted. The regional difference might have been due to the presence of cholera in Cochabamba. However, the 4–5% availability observed was comparable only to that found by a survey conducted in Senegal (12); in other countries surveyed, oral rehydration salts were found in more than half of the pharmacies covered (11).

The adverse comments made by some pharmacists about oral rehydration salts (ORS) reflected their ignorance about the importance of ORS in managing diarrhea. Indeed, some authors have claimed that administration of glucose-salt solutions counts as one of the most important medical advances of the 20th century, because of the number of lives that it has saved.

As indicated in Table 3, the recommendations of some pharmacists appeared to vary with the patient's age. Though not all the differences are statistically significant, relatively more childhood cases received recommendations to visit a physician or increase fluid intake, while loperamide was recommended for relatively fewer childhood cases.

Because a noteworthy share of the population goes first to a pharmacy in seeking solutions for acute diarrhea problems (1), there is good reason to assume that pharmacists play an important role in controlling this type of disease and should therefore be included in the established activities of Bolivia's National Diarrheal Disease Control Program.

Diarrheal disease control activities that need to be carried out nationwide at the primary care level include the following: ensuring the availability of oral rehydration salts at all pharmacies; encouraging pharmacists to promote the use of oral rehydration salts and ORT in all cases of diarrhea; including this particular group of health workers in training activities conducted by the Health Secretariat; and establishing supervisory mechanisms for dispensing and distributing pharmaceuticals to be applied to pharmacies, laboratories, and importers. In addition, it is recommended that the current guidebook (*Formulario terapeutico nacional*, second edition, published by the Ministry of Social Welfare and Public Health) be revised with a view toward removing all medications that are contraindicated for the treatment of acute diarrhea.

The work that has been reported here served as a starting point for the National Health Secretariat of Bolivia, in coordination with the National Association of Pharmacy Owners, to implement a training strategy focused on pharmacy employees. The training, currently being conducted in the country's various regional secretariats, will be subject to later evaluation.

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