Oral rehydration solutions in ‘section 30’ areas
A study in two farming districts in the southern Transvaal

M. E. EDGINTON

Summary
Six hundred and twenty-three black mothers of young children were interviewed on the white-owned farms on which they lived and/or worked in two magisterial districts of the southern Transvaal.

Only 8% described an acceptable method of preparing oral rehydration solution (ORS). Of those mothers whose children had recently had diarrhoea, 5% had given ORS. Thirty-one percent of mothers had litre containers, sugar and salt in their homes, while 84% had cups, sugar and salt.

Recommendations are made about health education appropriate to the needs and the resources of black women living on farms.


Death rates in young black children in 34 selected magisterial districts in South Africa are high. Diarrhoea is a major cause of death in these districts, as in most rural parts of the country.

This study set out to investigate the prevalence of diarrhoea in under-5-year-old black children, the mothers’ behaviour when their children had diarrhoea, and knowledge of the preparation of oral rehydration solution (ORS) in two farming districts in the southern Transvaal. In addition, information was collected on whether or not mothers had the ingredients and containers for the preparation of ORS.

Health services for farming districts outside the municipal boundary of the central town are:

1. Promotive and preventive (Section 30 of Health Act No 63, 1977). A mobile clinic staffed by a professional nurse visits points in a 6-week cycle delivering child health, antenatal and family planning services. In the Transvaal, this is the responsibility of the Provincial Health Services.

2. Curative. Either local private practitioners or provincial hospitals provide curative care.

Methods
This study was carried out in white-owned farmlands in the magisterial districts of Ventersdorp and Balfour, from January to June 1987.

The study population comprised black mothers who had borne a child within the 5 years before the study and were resident on the farms as relatives of employees or themselves employed as farm workers or domestics.

The population was sampled in such a way that geographical areas and farms with varying populations of black women were represented. Interviews were conducted by one or two trained field workers using an interview schedule. Mothers were asked:

(i) whether their child/children under 5 years of age had had diarrhoea within the 2 weeks before the interview (diarrhoea being more than two loose or watery stools within 24 hours);
(ii) what they had done for that diarrhoea; and
(iii) to describe how to prepare ORS.

Each mother’s stated preparation was assessed as acceptable or not according to preset standards: acceptable — 1 - 3 teaspoons of sugar and 1 - 2 pinches of salt in 1 cup of water or 5 - 8 teaspoons of sugar and ½ - 1 teaspoon of salt in 1 litre of water; and not acceptable — less or more than the acceptable levels in the appropriate volume of water.

Results
Six hundred and twenty-three mothers were interviewed, 417 from Balfour district and 206 from Ventersdorp district.

The 623 mothers had borne 817 children within the 5 years before the study. Twenty-nine children had died, 16 from diarrhoea.

One hundred and eleven children (14% of the total of 788 surviving children) had had diarrhoea within 2 weeks before the interview.

Table I summarises how the mothers had managed diarrhoea in these 111 children. Only 5 (5%) said that they had used ORS.

Table II shows the preparation of ORS as assessed against the standards prescribed. Of the 623 mothers questioned, only 48 (8%) gave an acceptable description of how to prepare ORS.

The presence or absence of ingredients and containers necessary in the preparation of ORS is given in Table III.

### Table I. Mothers’ Management of Diarrhoea

<table>
<thead>
<tr>
<th>Method</th>
<th>No. of mothers</th>
<th>% of all mothers with children with diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>No action</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Home remedy or diet change</td>
<td>38</td>
<td>34</td>
</tr>
<tr>
<td>Child taken to doctor or clinic</td>
<td>30</td>
<td>27</td>
</tr>
<tr>
<td>ORS</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>111</td>
<td>100</td>
</tr>
</tbody>
</table>

### Table II. Overall Preparation of ORS

<table>
<thead>
<tr>
<th>Acceptable</th>
<th>No. of mothers</th>
<th>% of all mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptable</td>
<td>48</td>
<td>8</td>
</tr>
<tr>
<td>Unacceptable</td>
<td>117</td>
<td>19</td>
</tr>
<tr>
<td>Don’t know</td>
<td>458</td>
<td>73</td>
</tr>
<tr>
<td>Total</td>
<td>623</td>
<td>100</td>
</tr>
</tbody>
</table>
Discussion

Diarrhoea prevalence

The relatively small proportion of mothers who reported diarrhoea in their children is probably due to reluctance of mothers to admit diarrhoea or failure to recognise it.

Mothers' management of diarrhoea

Very few mothers stated that they had given ORS to their children with diarrhoea. Most had done nothing, some had used some form of home remedy, and some had sought medical advice. Considering the relative inaccessibility of hospitals and clinics and the expected prevalence of diarrhoea, the implications for child health, with risk of death from dehydration, are profound.

Mothers' knowledge of preparation of ORS

These results demonstrate very great ignorance on the part of mothers of how to prepare an ORS that would be useful in rehydrating a young child with diarrhoea. Only 48 mothers, 8% of the total, could prepare ORS correctly.

Association with maternal education

Several variables were examined for associations with knowledge of correct preparation of ORS. Of maternal age, parity and education, a higher level of education was the only variable found to be significantly associated with correct preparation (P < 0.001).

Ingredients to prepare ORS

Sixty-seven per cent of homes did not possess a litre container, a fact that has great significance for health education, which requires to be given within the resources of communities. The poverty of some mothers, combined with inaccessibility of shops, is such that 15% did not have sugar and 3% did not even have salt.

If the litre method of preparing ORS were to be taught in these farming districts, 69% of mothers would not have the appropriate ingredients or container. If the cup method were to be taught 84% of mothers would have the resources.

Conclusions

Only two farming districts were studied, so conclusions may not be generalisable to more such districts. However, there was no reason to suggest that these districts had unique characteristics.

Mothers' management of diarrhoea was inappropriate and knowledge of preparation of ORS was poor.

Litre bottles were not available in many homes. In a small percentage of homes sugar and salt were not available.

Recommendations

Education on home management of diarrhoea with correctly prepared ORS is an urgent health service requirement in the districts studied.

The methods and content of the education need to take into consideration the educational status of women, and the available resources. The cup method of preparation would seem to be the most appropriate in the light of the findings of this study.

Demonstration and explanation in mothers' own language with their participation and with constant repetition of the message are required in order to equip them with the necessary knowledge and skills.

In addition, poverty, accessibility of shops and educational facilities need appropriate intervention.

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REFERENCES