

News from the Regions—Newsletter from the Gambia

Continuous and Non-continuous Use of WSS Solution for Oral Rehydration Therapy among Rural Gambian Women

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From 1981 to 1984, the US Agency for International Development sponsored a health education project in The Gambia to promote changes in mothers' management of their children's diarrhoea, specifically the promotion of an oral rehydration solution using water, sugar, and salt found in the home. Following a careful policy review, The Gambia had opted for water-sugar-salt (WSS) solution in the home, only distributing full-formula WHO packets to workers at health facilities.

The project used a strategy integrating radio broadcasts, pictorial flyers, and interpersonal channels to teach mothers how to mix WSS correctly and how to administer it to their children.

As reported elsewhere,¹ the project had some remarkable success. Starting from a situation of almost zero knowledge about how to correctly mix the home-made WSS solution, approximately 70 per cent of the targetted mothers had learned how to mix the solution at the end of 2 years. By the end of year 2, 88 per cent of these mothers had tried WSS at least once. Treatment with WSS of cases of diarrhoea increased from 4 per cent of cases in the 2 weeks preceding the intervention to 49 per cent at the end.

A critical concern for ORT programmes is the perseverance of mothers in their use of fluid therapies.

Acknowledgement

The research reported in this paper has been supported by the Office of Education and the Office of Health of the Bureau for Science and Technology, U.S. Agency for International Development, under contract AID/DSPE-C-0028, with additional support from the USAID Mission in The Gambia and the Ministry of Health, Labour, and Social Welfare in The Gambia. Data analysis was supported under a subcontract from the Academy for Educational Development under prime contract DPE-1018-C-00-5063-00. The authors wish to thank Carol Baume and J. Douglas Storey for helpful comments and assistance.

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This report describes mothers who continued to use WSS once they tried it for the first time, and develops a general profile of those mothers who did persevere with WSS therapy vis-a-vis mothers who did not.

Methodology

To measure changes in knowledge and practice of the WSS therapy the project undertook a study of 1051 mothers with children under 5, concurrent with the intervention. These mothers became the subjects of a 29-month panel study.

Continuous use of WSS

To measure WSS use, mothers were asked 13 times over the course of the study about how they had treated the last case of diarrhoea in each of their young children. Because only a small percentage of the mothers were interviewed in all the interview waves, these 13 waves were condensed into seven waves spaced 1-3 months apart. In this way, 471 mothers were identified who had been seen at all the seven interviews.

A mother was defined as a continuous user of WSS if, once she reported using WSS for the last diarrhoea case in one of her children, she reported using it for the last case every time she was interviewed subsequently.* Thirty-five per cent (165) of the mothers were continuous users. Most of the mothers in this group showed a pattern of skipping WSS use, rather than stopping altogether. Only 36 mothers (8 per cent) reported using WSS, then stopped and never used WSS again. Fifty-seven per cent of the mothers (270) started using WSS, stopped, then started again.

* The interview waves were spaced to ensure as much as possible that mothers were reporting on new cases in each interview. The interview waves were grouped to allow at least 1 month between measurement point and generally 2-3 months. The waves separated by only 1 month occurred during the rainy season, when diarrhoea is much more prevalent and it is likely that a mother would have a new case at least once a month.

TABLE I
Summary of the relationship between continuous and non-continuous users and selected variables

Variable	Category associated with continuous WSS use	Level of significance of chi square
Demographic		
Mother's age	—	NS
Mother's education	—	NS
Occupation of compound head	—	NS
Compound literacy	Literate	$P < 0.05$
Tribe	Serahule	$P < 0.0001$
Access		
Health centre access	Low	$P < 0.0001$
Ownership of radio	No radio	$P < 0.05$
Possession of WSS ingredients	No ingredients	$P < 0.005$
Knowledge and awareness		
Mixing knowledge	Correct knowledge	$P < 0.0001$
Mixing and administration knowledge	Correct knowledge	$P < 0.0001$
Awareness of red flag	—	NS
Ownership of flyer	Has flyer	$P < 0.0001$

Knowledge of WSS mixing and administration

Mothers who correctly recited the amounts of each of the three ingredients in WSS (three soft-drink bottles of water, one cap of salt, eight caps of sugar) at least three out of four times were coded as having correct mixing knowledge. Fifty-six per cent of the mothers knew correct mixing amounts three out of four times.

An overall WSS knowledge measure was constructed from the responses to the mixing questions and to questions about administration (what to do if the child vomits while being given the solution, and how often to mix a fresh batch of the solution, and how to administer the solution to the child). On this stringent measure, only 32 per cent of the mothers could be considered adequately informed to both mix and use WSS properly.

Access to health services

Access to health services was classified in three categories: high, medium, and low. Thirty-one per cent of the mothers had high access to health services (full-time health centre in village), 34 per cent had medium access (clinic less than 5 km away), and 35 per cent had low access (clinic more than 5 km away).

Results

Characteristics of continuous and non-continuous users are summarized in Table I. Overall, the results show that continuous users were more likely than non-continuous WSS users to be more isolated, to have fewer material resources, and to have greater

knowledge or information about the WSS formula. The basic demographic characteristics, age and education of the mother, and occupation of the head of the compound, were not significantly associated with continuous WSS use.

Isolation

Indicators of isolation are access to health care and tribe (some tribes are located in more geographically distant areas). The low- and medium-access groups have a slightly higher proportion of continuous than non-continuous users: 19 per cent of the high-access group were continuous users compared with more than 40 per cent of the low- and medium-access groups.

Analysis by tribe (Mandinkas, Wolofs, Fulas, Jolas, Serahules, and all others) showed a significant association (at $P < 0.01$) between continuous use and membership in more isolated tribes. Jolas were least likely to be continuous users (only 18.0 per cent) compared with 31 per cent of Mandinkas, 42 per cent of Wolofs, 45 per cent of Fulas, and 59 per cent of Serahules. The Serahules live primarily in the easternmost part of the country and are farthest from the capital city. The Jolas live near the coast of The Gambia, near the capital city and its health services.

Material resources

Women who did not have the WSS ingredients were almost equally as likely to be continuous users as non-continuous users (49 per cent versus 51 per cent, respectively). However, women who had the WSS

materials at home were much less likely to be continuous than non-continuous users (68 per cent versus 32 per cent, respectively).

Only 32 per cent of those with access to a radio were continuous users compared with 42 per cent of those without access.

Knowledge of WSS mixing and access to mixing information

Although continuous users had less access to information from radios and health centres, they did tend to have correct WSS knowledge. Over 50 per cent of the women who regularly reported correct knowledge of mixing proportions were continuous users, compared with only 18 per cent of the women who did not.

Similarly, the more stringent criterion of mixing and administration knowledge was significantly associated (at $P < 0.0001$) with continuous use. Fifty-three per cent of the more knowledgeable women were continuous users, compared with only 28 per cent of the less knowledgeable women.

A significant association (at $P < 0.0001$) was found between possession of the project's mixing flyer and continuity of use. While five women in six actually had flyers, the women who had no flyers were much more likely not to be continuous users (88 per cent of non-continuous users did not have flyers, as compared to only 12 per cent of continuous users).

Discussion

The findings suggest that continuous users were isolated, unsupported women with relatively few re-

sources. The 35 per cent of the women who stayed with the WSS solution did so against certain disadvantages; indeed, relative to non-continuous WSS users, they were a disadvantaged group. They were generally farther away from a health centre and without regular supplies of sugar and salt in their homes — they evidently had to make special efforts to acquire these ingredients when their children came down with diarrhoea. They tended not to have a radio, an indication of less access to information and fewer resources.

Although they did not have as many outside resources, continuous users did have correct knowledge or a copy of the WSS flyer to use as a reference.

These mothers' loyalty to WSS may be explained as their grasping onto the only diarrhoea therapy they could get. WSS seems not to have been adopted, in greater proportions, by poor, isolated mothers, whose main investment was in learning the mixing and administration procedures.

Discontinuity of use seems only rarely to be a phenomenon of total rejection of WSS solution. More common is sporadic use, suggesting that WSS has become one item in a larger armamentarium of diarrhoea therapies—women who use WSS only sporadically are women with access to clinics and perhaps to other diarrhoea drugs.

References

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