NOTES ON THE POTENTIAL FOR A WEANING FOODS INTERVENTION IN THE SUDAN

by

Richard M. Lockwood, Ph.D.

Boston
January, 1982

A HOVIPREP Consultant's Report

Home and Village Prepared Weaning Foods Project
of the Harvard/Massachusetts Institute of Technology
International Food and Nutrition Program.

Room 20A-202, 18 Vassar Street
Cambridge, Massachusetts 02139
(Tel. 617-253-3462)

TABLE OF CONTENTS

I. Background to the Consulting Trip

II. Review of Infant Feeding Practices and Weaning Foods in the Sudan

III. Results from a Sample Study in South Kordofan Province

IV. Nutrition and Health Programs in the Sudan

V. Recommendations for a Weaning Foods Intervention

REFERENCES

NOTES ON THE POTENTIAL FOR A WEANING FOODS INTERVENTION IN THE SUDAN

I. Background to the Consulting Trip

I visited the Sudan December 8-30, 1981, at the request of UNICEF, to assist in the development of a pilot nutritional surveillance program for the monitoring of pre-school children in South Kordofan Province (see Lockwood 1982).

During this trip, I also was asked by the AID Office of Nutrition in Washington to explore the possibility of developing a maternal and infant feeding component within the general framework of the community program, as part of the nutritional surveillance project once this had been established (letter of November 5, 1981, from Tina Sanghvi, AID Office of Nutrition, Washington, to May Ann Micka, Health Officer, USAID/Khartoum).

This present report deals with the latter component of the consultancy, relating to weaning and supplementary foods.

II. Review of Infant Feeding Practices and Weaning Foods in the Sudan

According to the El Shazli (1979), the main etiological factors leading to malnutrition among preschool age children in the Sudan are infections, diarrheal diseases, ignorance, taboos and traditional infant feeding practices. Of 1291 children from the ages of 0-4 years old examined in Gezira, only 47% were classed as normal weight for age according to the Gomez Classification. Thirty-five percent of the children were classified as having Grade 1 (mild) malnutrition, 17% as having Grade 2

(moderate) and 1% as having Grade 3 (severe) malnutrition. The growth of children in Gezira was similar to the Boston standards up to the sixth month; thereafter, growth lagged behind the standard and the gap persisted through at least the fourth year of life (Taha, 1978).

Most mothers start breastfeeding on the first day of delivery, use both breasts during each feed, feed on demand and keep their infants by their side at night for night feeds. In the Nuba areas of Western Sudan, the infant is not given water for 40 days because breast milk is thought sufficient. Most mothers continue to breastfeed their children well into the second year. The average period in Khartoum is 14.8 months (El Shazali, 1970). The weaning process is often sudden. The infant frequently is physically separated from the mother, or the mother paints her breast with pepper, starchy material, quinine, or cotton to repel the child. Almost all children are completely weaned by the second year of life. (African Medical and Research Foundation, 1980). If the woman becomes pregnant before her child is due to be weaned, she will continue to nurse it for about two months, until the fact of the pregnancy has been definitely established. In the Gezira community, the most common reason for weaning was a new pregnancy (46.5%). In the hospital sample of infants with protein-energy malnutrition the most common reasons given for weaning the child were: child's illness (41%) new pregnancy (28%), intentional separation (25%), and mother's illness (6%). (Taha, 1979).

There has been a decline in the length of breastfeeding in the Gezira since the 1950's when proscriptions and religious traditions suggested that weaning be continued at least until the end of the second year.

Usually boys were weaned between 18 and 24 months and girls between 24 and 30 months unless a new pregnancy came along. Of 150 Gezira infants who had been hospitalized for PCM, 100 had been completely weaned: 4% before the age of 6 months, 35% between 7 and 12 months, 37% between 13 and 18 months and 24% between 19 and 24 months.

Supplementary fluids such as sugared water, lemon juice, and diluted powdered and whole milk are introduced early. The average ages at introduction of these fluids were 1.2 months, 2.5 months, 2.7 months and 4.2 months, respectively. Milk and sorghum paps, usually highly diluted to increase their bulk, have traditionally been given in addition to breast milk. Other sources of protein such as legumes, meat, fish, and eggs, were seldom used. There was no special cooking for children (Taha, 1979). There are no traditional weaning foods in the Gezira area. Children are weaned from the breast or the bottle directly onto an adult type diet. Weaning foods are customarily added to children's diets too late, and in insufficient quality and quantity (Taha, 1979). In the Gezira community, 25.5% of the mothers started to give supplemental foods before or during the infant's sixth month; 55.3% started between 7 and 12 months; and the remaining 19.2% started after 12 months.

In Western Sudan some mothers give "marrissa" (local beer made from sorghum) to infants to put them to sleep while they obtain water over long distances. There is a great contrast in incidence of bottle-feeding in the Sudan. In South Kordofan Province, there is no use of bottles to supplement or substitute for breast-milk, whereas in Gezira, 53% of the mothers have been reported using bottles. Further data shows that 61% of children studied received less than 100 ml. of undiluted animal milk per

day in addition to breast milk 200-300 ml/day; and only 6% received an adequate supplementary quantity of 400-500 ml/day in the Gezira community.

When a child develops diarrhea, most mothers stop breastfeeding and give other foods. To treat the diarrhea, some women give a potion called "dilka" which has pleasant-smelling herbs and fermented sorghum. In cases of vomiting a mixture of garlic and lemon is mixed in water and given to the child (El Shazali, 1979).

The factor of early weaning due to employment of women is not a problem in the Gezira region, because women are not employed outside the households. The most important explanatory variable of nutritional status in this area is income. The mothers' literacy, among children admitted to the hospital with severe PEM, was significantly lower than that found in the surrounding Gezira community (Taha, 1979). The cutoff-point for mothers was 4 years of elementary education.

III. Results from Sample Study in South Kordofan Province

The duration of breast-feeding (Table 1) was at least 1 year for 100% of the sampled mothers, Nuba and Arab, in both villages. However, supplements had been introduced in the first six months of life by 64% of the Arab women and 58% of the Nuba women (Table 2). There was no infant formula or bottle-feeding in either El Kweik or El Efin. The most common weaning foods introduced were goats' milk and a sorghum (dura) porridge. (Table 3).

The majority of the children are totally weaned from the breast during the second year of life. One finds a drop in nutritional status after 12 months of life in the village of El Efin and among the Nuba in El Kweik. The promotion of locally available weaning foods would appear to be a key

intervention in reducing the incidence of malnutrition during the second year of life. It is the custom to physically separate the infants from their mothers at weaning and give them to their maternal grandmothers.

According to Shazali (1979), the most common reason for weaning is a new pregnancy. Most mothers believe that the milk of a pregnant mother is harmful to children. In the study on "The Married Women of Northern Sudan" (A.G.T. Carter, July, 1981) the overall average of full breast-feeding was 6 months (the sample included 3115 women.) There was no statistically significant difference in average length of full breast-feeding when the data were disaggregated by rural/urban residences and type of education.

TABLE 1

Duration of Breast Feeding, El Kweik and El Elfin Villages, South Kordofan Providence, December 1981

	Arab (=17)	Nuba (N=19)
0-6 months.....	0	0
7-12 months.....	0	0
13-24 months.....	15 (88%)	14 (74%)
25-36 months.....	2 (12%)	5 (26%)

TABLE 2

Age of Introducing Supplement, Two Villages

	Arab (N=17)	Nuba (N=19)
0-4 months.....	6 (35%)	5 (25%)
5-6 months.....	5 (29%)	6 (32%)
7-9 months.....	3 (18%)	6 (32%)
10-12 months.....	3 (18%)	2 (11%)

TABLE 3

Most Common Weaning Foods in Order of Frequency

	Arab		Nuba
1.	Goat's milk	1.	Porridge made from "dura" (sorghum)
2.	Porridge made from "dura	2.	Goat's milk
3.	Starch from "dura"	3.	Starch from "dura"
4.	Rice	4.	Rice, biscuits and lemon juice
5.	Stew (the family pot), lemon juice and biscuits		

IV. Nutrition and Health Programs in the Sudan

Nutrition activities in the Ministry of Health are carried out by the Nutrition Division (established in 1966) and have included: data collection on food consumption and nutritional status; establishment of growth norms; creation of provincial units to provide minimal nutrition services and to serve as monitoring units; nutrition education of mothers through Maternal and Child Health training; and preschool feeding programs in conjunction with the Catholic Relief Service.

The Ministry of Education established a Nutrition Training Center in 1964 with funds donated by the Canadian Red Cross. The center trains home economic teachers for primary and secondary schools, offers short term nutrition courses for nutrition educators who are assigned to Adult Education and Community Development Centers and have three and four year degree programs in home econiomics at the University of Kartoum, the Afad University College for Women and the Shambat Institute for Agriculture.

Rural health and nutrition policy is based on the implementation of the Primary Health Care Program (PHCP), a community based health service designed to improve health and social conditions in hard-to-reach

rural areas. The key component of the PHCP is the Community Health Worker (CHW), recruited from his village and trained and employed by the Ministry of Health. Each CHW serves about 4000 people within a 16 kilometer radius.

The Community Health Worker is required:

1. To maintain constant contact with the members of the community and with their leaders, as well as with other community development workers;
2. To participate in community projects; and
3. To advise the community on water supplies, collection and disposal of refuse, good nutrition based on local foods, and health education including demonstrations on foods and use of latrines.

Special cadres are trained for nomadic tribes. A second source of village health workers is the village midwife, who differs from the traditional birth attendant (TBA) in that she receives nine months of formal training. Most are illiterate women and are chosen from their respective communities. There is at least one training school in each district.

The PHCP program for community health workers, village midwives, and traditional birth attendants receives technical assistance, medical supplies and financial support from USAID, UNICEF, WHO and the International Medical and Research Foundation.

V. Recommendations for a Weaning Foods Intervention

The most effective way to influence weaning practices (early vs. late weaning; abrupt vs. gradual; and partial vs. complete) is to assist the Ministry of Health in their Primary Health Care Program to train village level personnel in nutritional surveillance for monitoring child growth and promoting appropriate weaning practices. Nutrition education materials on the weaning process should be incorporated into the training curriculum (Lockwood, 1982).

The CHW's receive nutrition education about appropriate weaning foods as part of their training. However, it is not a strong part of the curriculum. Two aspects should be emphasized. One aspect deals with general principles of weaning food identification, mixes, preparation, and timing. The second, and no less important, is field supervision during the training sessions, so that CHW's have first hand experience in interviewing mothers and surveying infant feeding practices. This type of training might also be extended to other existing training programs for village mid-wives and traditional birth attendants, since they are responsible for both pre-natal and post partum care and could collaborate effectively with the CHW's in promoting of infant-feeding practices.

In urban areas, mobile teams of nutrition educators could provide weaning food education at health posts during periodic immunization campaigns, and at the open markets when the women come to purchase their produce. The thrust of the programs in both urban and rural areas would be to emphasize timing of introduction of supplement, gradual withdrawal of the breast, but to reinforce the use of already available local foods, since food supply does not seem to be a problem.

REFERENCES

1. African Medical and Research Foundation

   1980 "Baseline Survey: Western Equatoria Province," Primary Health Care Programme, Regional Ministry of Health, Southern Sudan.

2. Carter, A.G.T.

   1981, The Married Women of Northern Sudan, preliminary analysis of Sudan Sample from World Fertility Survey, Khartoum, Mimeo.

3. El Shazali, H.

   1979 "Nutritional Taboos and Traditional Practices in Pregenancy and Lactation including Breast-feeding," mimeo: Conference Proceedings, WHO Seminar on Traditional Practices Affecting the Health of Women, Khartoum, Feb. 10-15, 1979. WHO: March, 1979.

4. Ernster, Mark

   1976 "Investigation of dietary changes in the Gezira Sudan," Ecology of Food and Nutrition, 5: 217-225

5. Lockwood, Richard M.

   1982 "A Proposed Methodology for Testing Nutritional Surveillance in South Kordofan Providence," UNICEF Report, January 1982.

6. Taha, S. A.

   1979 "Ecological Factors underlying Protein-Calorie Malnutrition in an Irrigated Area of the Sudan," Ecology of Food and Nutrition, 7: 193-201.

7. Taha, S. A.

   1978 "The Prevalence of Severity of Protein Calorie Malnutrition in Sudanese Children," Journal of Tropical Pediatrics and Environmental Child Health, 24 (5): 203-205