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"Wet feeding" — a Policy of Food Supplementation

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Introduction

At present the crisis of hunger is rapidly increasing more than any epidemic disease. Millions of people are suffering from hunger and threatened by death irrespective of the cause: ecological, economic or political.

Scientists were able to find solutions for most epidemic diseases, but to save people from hunger they did not find any. This is a complex matter: to deal with the hunger one should react to the cause of hunger. In most cases, one cannot change causes, but intermediate solutions can be found. One of them is food supplementation (6). The supplementation depends on the:

- severity of the situation,
- number of starving people,
- nutritional status,
- access to locally available food (3).

Food is distributed in two forms: dry rations and so called "wet feeding" (Table 1).

Table 1:
Different ways of food distribution

A) Dry rations:	General full food distribution (ca. 2400 kcal/d)
	half assisting food distribution (ca. 1200 kcal/d)
B) Wet feeding:	mass feeding
	supplementary feeding (Children < 5 years, pregn. & lactating mothers)
	therapeutical feeding (protein-energy malnutrition)

Dry rations to the people who are able to prepare their own meals.

Wet feedings: freshly prepared diets are served to the people.

Methods

To establish a wet feeding program, one has to define the target group. In a famine area, the whole population has to be provided for (mass feeding). There are special measures to identify the children who are at risk of malnutrition, and who are malnourished. A fast screening of children between one and five years of age is the measurement of the mid-upper-arm-circumference (MUAC). A MUAC of less than 12.5 cm is considered as malnutrition (22). A more appropriate method of classification of protein-energy malnutrition (PEM) includes consideration of weight for height or weight for age (wasting) and height for age (stunting) (8, 20). Children who are mildly malnourished, pregnant women and breast feeding mothers receive one to three meals per day in a feeding center. This form of nutrition is called "supplementary feeding", which means additional food to the daily food at home. All moderately and severly malnourished children undergo a therapeutical feeding. The children are weighed daily and the exact amount of food is calculated for 24 hours. What ever the child does not eat in the feeding center, the mother takes home and tries to feed in smaller amounts at smaller intervals. The meals are prepared by local personal. They use the local system of fire making and their own methods of cooking. One nurse or trained health worker takes the responsibility of the correct distribution of food, for the hygiene and the cleaning in order to avoid the abuse of food supplies and the spread of communicable diseases (12).

Table 2:

Kind and locations of wet feeding programs

way of food supply	location	nutrients
therapeutical feeding (200 kcal/kg/d 3 - 4 prot./kg/d)	Cairo (dispensary)	milkpowder, banana, boiled eggs, veg. oil carrots, folic acid
	Sulaimaniya (paediatric clin.)	rice, lentils, veg. oil, protein biscuits, dried apricots, milk powder, folic acid
supplemantary feeding ad libidum	N-Iraq (collective villages)	rice, lentils, veg. oil, dried apricots, milk powder, folic acid
	Tamilnadu (kindergard./schools)	rice, lentils, seasonal vegetables, vit. A

Table 3:

Results of therapeutical feeding programs

location	number	period	mortality rate
Cairo	151	2 years	9,2%
Sulaimaniya	96	3 months	16,6%

Results

We had the opportunity to share wet feeding programs in three different socio-economic, cultural and environmental areas: slums of Cairo, cities in Northern Iraq and villages in Tamilnadu/South India. In Cairo and Sulaimanyia therapeutical feeding was carried out. In the remainder Northern Iraq wet feeding centers in so called "collective villages" were established. There, children, pregnant women and breast feeding mothers had access to warm meals. In Tamilnadu all the children who are visiting kindergarden and elementary school receive supplementary meals from the government (Table 2).

Within a period of two years out of 151 malnourished children treated in a dispensary in Cairo 14 children died, whereas in Sulaimanyia in a period of three months 16 out of 96 treated children died (Tab. 3).

Conclusions

I. In certain circumstances, for instance refugee camp-situations, people not only have no access to food, but also lack cooking facilities, which makes the preparation of food difficult. In these cases "mass feeding" is indicated.

II. "Supplementary feeding" is provided to vulnerable groups in a feeding center:

- Children between six months and five years of age have increased nutrient requirements, are most vulnerable to infectious diseases (measles, diarrhea etc.) and are often suffering from a lack of appetite (5, 7, 10).
- Pregnant women: it is known that during famine and low nutritional status of mothers, babies are born of low birth-weight, small for date babies. It is established that supplemented calories during pregnancy increases the birth weight. 10,000 calories of food supplementation during pregnancy increases the birth weight 25 - 85 gms. Protein supplementation and maternal food could not be correlated (2, 13, 14, 15, 18, 19).
- Lactating mothers: most of the mothers in developing countries breast-feed their babies (4). The quality and quantity of milk available to infants can be influenced by maternal nutrition (21).

III. Therapeutic feeding refers to exactly measured and controlled meals given to malnourished children at frequent (2 - 3 hours) intervals (17). In addition the mother can be trained in child rearing and nutrition-related diseases can be treated. Daily control of weight shows whether

- the child accepted the food,
- the child responds to it or not,
- the mother took care of the child and fed it or not,
- the family abuses the food for other purposes.

The use of milk-powder (DSM, DHM, infant formula) is highly sensitve and can create numerous problems of various origins. Those range from technical and logistical to health hazards, like dilution, contamination and lactose-intolerance. Milk powder is only given under strict control of the staff or is added to cooked food. In that way, milk can be absorbed and represents a safe source of protein, some vitamins and minerals. Bottle-feeding in a feeding center is obsolete (1, 9, 14, 15).

Very often traditional use of local specific nutritients provide precious elements. For instance, the additional use of dried apricots, so called "Kayssi" in some countries of the middle east provides high amounts of potassium. As malnourished children are suffering from potassium deficiency with relatively high sodium levels, oral supplementation with "Kayssi" cover the potassium deficiency in a safe way (24).

On the other hand, one can find deficiencies of nutritients, which are present in locally grown fruits and vegetables. For instance, in Southern India, we find many cases of vitamin A-deficiency despite abundance of papaya, mango and carrots in that region, because poor people have no access to these fruits. That's why vitamin A is offered to the children in kindergarden and school.

Therapeutic feeding is a longterm process. Regular follow up is the key for a successful realimentation. Where there is no way for a regular follow up the expected results can not be achieved. Therefore short term feeding programs show a higher mortality rate than long term programs (Tab. 3).

Summary The effect of wet feeding is obvious: beside caloric and nutrient food supply, people at risk of starvation and malnourished children have access to cooked food. The mother or person who is taking care of the child can learn appropriate child feeding, sometimes with unconventional methods. Wet feeding makes sure that only those who really need food, receive it. "Every man, woman and child has the inalienable right to be free from hunger . . ." (cit.: Universal Declaration on the Eradication of Hunger and Malnutrition, 1974) (11).

Food is the specific drug against hunger and malnutrition!

Key words Food supplementation, wet feeding, therapeutical feeding, malnutrition.

Zusammenfassung

"Wet feeding" — Eine Ernährungsform in Ausnahmesituationen

Millionen Menschen sind vom Hunger bedroht. Die Ursachen des Hungers sind vielschichtig: ökologische, politische und ökonomische. Um das Hungerproblem zu lösen, müßten die Ursachen beseitigt werden. Dies ist oft nicht möglich. Eine Zwischenlösung stellt die Verabreichung von Nahrungsmitteln an hungernde Menschen dar. Ernährungsprogramme können auf zwei verschiedene Arten durchgeführt werden:

I. Grundnahrungsmittel werden an Personengruppen verteilt, welche in der Lage sind, ihr Mahl selbst zuzubereiten.

II. Vorgekochte Mahlzeiten, sogenanntes "wet feeding", werden an Personen ausgegeben, welche neben fehlenden Grundnahrungsmitteln keine ausreichende Kochmöglichkeiten haben.

Je nach Situation sind verschiedene Formen von "wet-feeding" indiziert:

a) Massenernährung: alle Menschen einer definierten Region, z. B. Flüchtlinge in einem Lager.

b) Ergänzende Nahrungsmittelsubstitution an Kinder, stillende und schwangere Frauen in einem Ernährungszentrum.

c) Therapeutische Nahrungsmittelsubstitution ist die kontrollierte Realimentation von mittel- bis hochgradig mangelernährten Kindern.

Die Einbindung einheimischer Mitarbeiter stellt sicher, daß den Menschen vertraute Nahrungsmittel zubereitet werden (z. B. ist die Verwendung von Milchpulver problematisch) und Ernährungsprogramme über längere Zeiträume aufrecht erhalten werden können.

Schlüsselwörter Ernährungsprogramme, therapeutische Ernährung, Mangelernährung, Verabreichung von vorgekochten Mahlzeiten.

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