

Diarrhoea Dialogue



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Breastfeeding: best start for all babies

Babies fed on human milk seem to get less diarrhoea than those fed on breastmilk substitutes. If they do become infected, they are much less likely to die. Breastfeeding should always be continued throughout oral rehydration therapy.

Scientific evidence is fast accumulating to justify the belief that breastmilk is not only the ideal food for all newborns and infants up to six months, but also contains special substances which help protect them against dangerous organisms in the environment (see pages 4 and 5). From its first issue four years ago, *Diarrhoea Dialogue* has continually stressed both the nutritional and the protective significance of breastmilk. Breastfeeding is especially important where diarrhoeal and other infections are common, water supplies are unsafe and supplementary foods suitable for small children are both costly and scarce.

More local groups needed

This issue of *Diarrhoea Dialogue* describes the many benefits of the breastfeeding partnership to both mother and baby. It includes a special pull-out poster based on the materials used by a group in Kenya to promote breastfeeding among local mothers. We hope this will encourage other readers to start their own groups and there is a list on the poster of information sources to help you to do this.



Breastfeeding partnership

Value of colostrum

Breastfeeding should start on delivery. Colostrum (the special fluid present in the breasts at birth) is particularly rich in protective substances. Newborns should be suckled straightaway, and then as frequently as possible to help establish and maintain the breastmilk supply. The suckling of the baby helps the mother's womb to contract which reduces any danger of maternal bleeding. It helps later on with family spacing. There is therefore an extra contraceptive benefit for the breastfeeding mother (see page 3).

Very small, feeble or sick infants have a special need for human milk.

Even where babies cannot suck effectively, breastmilk can be expressed and, if necessary stored for their feeding (see pages 6 and 7). The mother is, however, the best and safest milk bank!

Reversing the trend

It is a sad comment on perceived social priorities that the custom of breastfeeding seems to be on the decline, most noticeably among Third World urban populations, just when well-educated Western women are busy rediscovering its advantages both for their infants and for themselves (see page 2). This trend away from breastfeeding in developing countries needs to be stopped. First, however, it has to be understood. Only then will breastfeeding be marketed as successfully as breastmilk substitutes were being marketed before the introduction of the International Code (see page 3).

Rethinking priorities

Many more women in almost all countries now both wish and need to work outside the home. Social and industrial adjustments must be made to permit them to combine breastfeeding with employment. Extensive family and community support for breastfeeding mothers is essential. Human milk must continue to play its invaluable part in reducing diarrhoea mortality, morbidity and severity and the associated malnutrition among the world's children. It is everyone's responsibility to see that babies everywhere receive their natural and best start in life.

KME and WAMC

In this issue . . .

- The role of breastfeeding in child survival
- Breast milk banking in the U.K. and India
- News and reviews

AHRTAG

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ORT in East Germany

By law, all cases of diarrhoea in the German Democratic Republic (GDR) must be reported. This system, operating since 1966, has revealed high attack rates due to diarrhoea, although without the high mortality found in developing countries. This is because patients are generally much healthier and, in particular, are much better nourished. They can also be treated quickly. Until 1979 standard treatment for diarrhoea in the GDR was by rehydration with drinks of tea or glucose-free solutions. Severe cases were given intravenous drips in clinics. Antibiotics were used where necessary.

Since 1979 the Institute of Childhood Infectious Diseases in Berlin-Buch has been using Oral Rehydration Salts (ORS) in the treatment of dehydration as follows:

1. Children who have already been given drinks such as tea are then given ORS (known as Oralyt in the GDR).
2. Almost all the children who would previously have been rehydrated intravenously, are now given ORS by mouth. Intravenous drips are very rarely used.
3. No side effects, either metabolic or other, have been found with use of Oralyt.

Other clinics in the GDR are now using Oralyt — particularly for treating children in out-patient departments. As a result, the Institute for Drugs and Drug Control has put Oralyt on the official medicines list. This has provided a standard for all pharmacies regarding the manufacture, storage and dispensing of Oralyt.

The successful use of Oralyt in the GDR highlights how a practical treatment, developed to solve a problem in the Third world, can also be used very effectively elsewhere.

Professor Dr H. W. Ocklitz, Institute of Childhood Infectious Diseases, Wiltbergstrasse 50, Berlin-Buch, GDR 1115.

Arabic DD

An Arabic edition of *Diarrhoea Dialogue*, containing material from issues 1–15, will be available in June.

Readers who would like to receive this should write to AHRTAG, 85 Marylebone High Street, London, W1M 3DE, U.K.

Portugal: rediscovering breastfeeding

Women in many countries are rediscovering the benefits of breastfeeding for both themselves and their babies. This trend is clear in Portugal which has characteristics of both developed and developing countries. The increase in breastfeeding here is due largely to the promotional effort being made by paediatric associations, paediatric and teaching hospitals, maternity units, health centres and educators. The implementation and monitoring of the International Code of Marketing of Breastmilk Substitutes has been in operation since 1981 in Portugal. Several clinical surveys have been carried out to evaluate the success of these interventions in promoting breastfeeding.

From our own experience three main facts have emerged:

- In the children's hospital at Coimbra, no child was admitted with severe dehydration who had been exclusively breastfed. Of 4,213 children admitted during a year in the short-stay hospitalisation unit, 422 needed rehydration for diarrhoea. All these children were being bottle-fed.
- Mothers staying close to their babies in the hospital are able to breastfeed them. Babies stay close to their mothers, not in a separate nursery and this is important for all, but particularly so if the infant has a low birthweight and/or is sick. Maternity and paediatric departments are ideal places to reinforce teaching which has been given at health centres. This dialogue between hospitals and health centres is essential to achieve the goal of increasing breastfeeding and reducing diarrhoea morbidity and mortality.
- A recent study in our district to assess breastfeeding prevalence in relation to illness showed that the number of infants with diarrhoea

was significantly less among those receiving only breastmilk, compared with those receiving breastmilk substitutes.

Dr A. Torrado, Hospital Pediatrico de Coimbra, Centro Hospitalar de Coimbra, 3001 Coimbra Codex, Portugal.

Urban priority

A study was carried out recently in Sri Lanka on the link between infant feeding practices and the incidence of diarrhoeal disease. In Colombo, over 90 per cent of small babies admitted to hospital with diarrhoea were found to have been bottle-fed.

In a larger community-based study, cluster samples were identified from 70 per cent of the total population. Weekly inquiries were made about the feeding practices and diarrhoeal illnesses of 2,700 infants. City children who were breastfed were shown to have a significant degree of protection against diarrhoea. In cases where breastfeeding had been stopped 25 per cent of the parents reported diarrhoea. Only 13 per cent of breastfed children had suffered from diarrhoea. This difference was particularly apparent during the first four to six months of life.

The Sri Lankan study underlines the particular importance of promoting breastfeeding in urban areas, where poor environmental conditions result in a high incidence of diarrhoea.

Professor Priyani Soysa and Dr Dulitha Fernando, Department of Paediatrics, Faculty of Medicine, University of Colombo, Sri Lanka.

Tropical Diseases Bulletin

Echoing the WHO day theme 'Children's Health — Tomorrow's Wealth,' the April issue of the *Tropical Diseases Bulletin* contains abstracts of 250 selected papers relating to children's health, available at £5/\$12.50 from the *Bureau of Hygiene and Tropical Medicine, Keppel Street, Gower Street, London, WC1, U.K.*

Journal of Diarrhoeal Diseases Research

International Centre for Diarrhoeal Disease Research, GPD Box 128, Dhaka 2, Bangladesh

In 1978 the World Health Organization set up a control programme for diarrhoeal diseases, and the International Centre for Diarrhoeal Disease Research was established in Bangladesh (ICDDR,B). The Centre is the home of this new journal, and it naturally lays special emphasis on work in Asia. However, anyone in the world interested in advances in the field would be well advised to examine this periodical since so much research in recent years has come from this part of the world.

There are to be four issues each year. The first half of each is devoted to original articles and short communications. In the first two issues these have come from countries as far apart as China and the USA, and have covered a range of subjects from developments in oral rehydration and drug therapy to the mechanisms of a variety of diarrhoeal agents, but especially cholera. The second half is devoted to an annotated bibliography.

About one third of the articles are merely mentioned by title and summarized in one or two paragraphs. These reviews might be more valuable if they concluded with a few sentences of critical comment, preferably signed by an authority on the subject. This would indicate the novelty and strength of the papers presented. However, the journal is off to an excellent start, has set itself a high standard to maintain, and is a valuable source for all those interested in research and for the many concerned with the management of diarrhoeal diseases.

Readers in the Asian region may like to know that the Centre also publishes a newsletter, *Glimpse*, which covers items of local popular interest relating to diarrhoeal disease prevention and control.

WHO study

WHO has carried out a collaborative study on prevalence and duration of breastfeeding in nine countries. Findings indicate that while there are

signs of a decline in breastfeeding among certain groups in developing countries, there is also a marked increase in the prevalence and duration of breastfeeding elsewhere. In Sweden and Hungary, the two most industrialized of the nine countries, only 7 per cent and 3 per cent respectively of the mothers studied had never breastfed their youngest child, a marked improvement from 25 years ago. In the Philippines and Guatemala the situation among middle-income mothers was significantly different: 32 per cent and 23 per cent respectively had never attempted to breastfeed their last child.

A more recent review of 200 studies suggests that a process is emerging in which higher income groups and industrialized countries set the trend, and are then followed gradually by the urban lower income, rural groups and less industrialized countries. Later, there is a resurgence of interest in breastfeeding among middle-income families and this, in turn, is gradually followed by other urban and rural groups.

Clear lessons

The information offers clear lessons for health planners and educators. A crucial fact is that breastfeeding is declining in urban areas of developing countries. At the same time, the data show that breastfeeding is quite compatible with an urban industrial environment and that appropriate breastfeeding promotion can succeed anywhere. It would therefore be ironic if, while breastfeeding rates were to increase in countries with low infant mortality and morbidity, they were allowed to diminish in countries where breastfeeding is still critical to sound infant and young child health.

Good infant health also depends on the capacity of mothers to care for their children. The mother of a large family of small children has little time or energy to attend to the needs of any one child. Child spacing is therefore an important aspect of the infant and young child morbidity and mortality equation. The WHO study showed that where the use of contraception was low, patterns of child spacing were closely related to the length and frequency of breastfeeding.

Promotion and support

If breastfeeding is to be effectively promoted, comprehensive programmes will need to be developed. These must involve measures to improve the social conditions in which women live and work and strengthen informal social support systems to help at-risk mother-child groups. The health care system in general needs to make a more concerted effort to promote appropriate infant and young child feeding and provide adequate educational support for mothers. In many situations this will require the revision of health care practices and attitudes.

The development of appropriate interventions also calls for the regular monitoring of trends in feeding practices. A simplified methodology has been developed by WHO for use in preparing national surveys of infant and young child feeding. This is available from the Maternal and Child Health Unit at WHO.

Manuel Carballo, Scientist, Maternal and Child Health, WHO, 1211 Geneva, Switzerland.

The Code: country evaluation

WHO has recently published a report⁽¹⁾ evaluating progress round the world in the implementation of the International Code of Marketing of Breastmilk Substitutes. Judging by the amount of information sent to WHO by Ministries of Health, it appears that many governments are taking the code seriously and ensuring that health staff are aware of its contents. Legislation has been altered in some countries to accommodate the provisions of the code.

James Akaré, Technical Officer, Division of Family Health, WHO, 1211 Geneva, Switzerland 27.

In the next issue . . .

Recent studies have underlined the key role of personal hygiene — especially handwashing — in preventing diarrhoea. *DD18* will look at these issues and includes a practical advice page on making soap.

Breastfeeding: helping to reduce the

Protection, energy and nutrients

Leonardo Mata considers the unique role of breastfeeding in child health and survival, and possible interventions to promote it in areas where bottle-feeding is common.

The exceptional properties of human milk are the:

- numerous powerful substances in human colostrum and milk which protect against infectious diseases;
- unique biochemical properties which assure the best combination of energy and nutrients for the growing child;
- remarkable behavioural interactions of mother and child which arise from breastfeeding;
- significantly lower cost when compared to any other form of infant substitute feeding.

Anti-infectious role

Many elements able to protect against pathogenic viruses, bacteria and parasites are found only in human colostrum and milk. They are not present in either quality or quantity in other animal milks, nor have they been synthesised or imitated by modern science. Anti-infectious substances can be:

- specific — such as immunoglobulins (antibodies) and lymphocytes (white blood cells) which affect humoral and cellular immune responses; or
- non-specific — like lactoferrin, lysozyme and bifidus factors which either make human milk a poor medium for bacterial survival or make the intestine unsuitable for the growth of pathogenic agents.

Furthermore, the electrolyte composition of human milk makes additional water unnecessary for the child even under dry and hot climatic conditions, reducing the risk of giving contaminated water. The many anti-infectious factors reduce the severity of symptoms of illness particularly diarrhoeal diseases. Epidemiological studies in both developed and developing countries reveal a lower incidence of diarrhoeal diseases, otitis

and acute respiratory infections in breastfed compared with bottle-fed infants.

It has been argued by some that infant mortality declined in the industrialized countries over the years during which bottle-feeding became popular. Any such direct correlation is not valid because other factors which can affect bottle-feeding techniques — education, availability of sanitation and safe water and improved standards of home hygiene — changed also over the same period. When social class and these other variables are taken into account, bottle-fed babies are seen to suffer more malnutrition, more

infections and to die more frequently than their breastfed counterparts in all countries.

Nutritional factors

Human colostrum and milk have unique biochemical properties — for instance a high content of energy from lactose and lipids. The protein composition of human milk is perfectly constituted and so aminoacid imbalance is unlikely. Furthermore, human milk contains substances that bind iron, zinc and other elements, allowing them to be easily absorbed, whilst protecting them from use by bacteria. The unique biochemical composition of human milk protects against nutritional deficiency and results in adequate growth, even among rural and slum infants living in poverty. In fact, growth rates are comparable with those of North American and European infants up to four to six months of age and even longer in some infants. When growth slows down in a two to four month old breastfed baby, the most common cause is deficient calorie consumption by the mother; food supplementation of the mother usually leads to a prompt increase in milk output and a subsequent improvement in growth of the baby.

Behavioural factors

Close contact and interaction between mother and infant immediately after birth stimulate successful breastfeeding. Sucking is strongest during the first hour after delivery and there is no difficulty in initiating breastfeeding even in mothers who had not wanted to do so. Early suction of colostrum stimulates the production of prolactin and synthesis of milk. It also indirectly strengthens the maternal self-confidence which is necessary for the release of oxytocin and the flow of milk. Breastfeeding strengthens the bonds of attachment and love between mother and child both during the critical child-rearing period and probably later in life.

Economic factors

Breastfeeding simplifies child-rearing in poor communities as it does not require refrigeration, bottles, fuel and money to purchase breastmilk substitutes. Cost-benefit analysis shows



The marvellous interaction between mother and baby.

severity of diarrhoea

that breastfeeding is less expensive than any other form of nourishment. To this should be added savings in transport, medicines and hospitalisation due to more illness in bottle-fed infants. It is impossible to calculate the value of human lives saved.

Decline in breastfeeding in developing countries

Children have survived through centuries because of breastfeeding. Non-human milk became available for human infants when animals were domesticated about 15,000 years ago. However, techniques to feed substantial amounts of non-human milk to infants and the mass production and preservation of cow's milk formulae only developed in this century. The most rapid changes in life styles have also occurred in the 20th century, contributing to a marked decline in incidence and duration of breastfeeding in most developing countries. At present, only traditional rural societies, for instance in Bangladesh, Peru and Zaire, carry on universal breastfeeding. Populations in transition — in either cities or countryside — are subjected to factors that interfere with breastfeeding. Among them are urban migration, changes from extended to nuclear families, exposure to inadequate medical practices and the promotion of milk formulae.

Promotion of breastfeeding

Studies in the Philippines and Costa Rica showed clearly that much can be done to alter the trend described above. It is relatively easy to increase the incidence and duration of breastfeeding in transitional societies by encouraging early mother-infant interaction through *rooming-in* and by providing maternal support in the post-partum period. More than 95 per cent of infants in a large maternity unit in Costa Rica have successfully started breastfeeding following interventions carried out after 1977, compared to the situation before in which 20 per cent of infants were not breastfed at all. A follow-up showed that more than 80 per cent were still at the breast at age three months, contrasting with 66 per cent of infants artificially fed at age three months before the interventions



Extracting milk with a breast pump

Photo by Leonardo Mata

began. The increased incidence and duration of breastfeeding was attributed to the new hospital interventions, and to contact between health workers and mothers shortly after discharge and at monthly intervals. The swing to breastfeeding was accompanied by a marked reduction in the incidence of diarrhoeal disease. Remaining limitations on lactation result from an excess of caesarean sections and other problems during childbirth. Feeding all pre-term and high-risk neonates from a pool of fresh colostrum in one large maternity unit in Costa Rica resulted in the virtual disappearance of diarrhoeal illness in neonates over the five years of the programme. Sepsis, acute respiratory infection and meningitis have also been significantly reduced.

Early discontinuation of breastfeeding and the introduction of substitutes is increasing in less developed countries. The rapid adoption of modern ways of life and of inappropriate Western medical practices are the most negative factors affecting breastfeeding. The negative role of some medical practices to which communities in less developed countries are increasingly exposed can be counteracted by encouraging mother-infant interaction after delivery through close contact and by promoting breastfeeding in the community. Most mothers know that breastfeeding is best but society often interferes with the process. It is time to reverse this trend.

Leonardo Mata Instituto de Investigaciones en Salud (INISA) Universidad de Costa Rica.

Further reading

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Perspectives on human milk banking

David Baum and Peter Rolfe discuss how breastmilk banking is carried out in the U.K.

All healthy, mature newborn infants are best fed with their own mother's milk. There is, however, considerable uncertainty about the ideal way to feed low birthweight, preterm (premature) and sick newborn infants. Recent studies suggest that human milk, and particularly the infant's own mother's milk, may be the best food for all babies.

Low birthweight and preterm infants spend many weeks in special care baby nurseries and many mothers, even those most motivated to breastfeed, find it difficult to keep up their milk supply. This is partly because of anxiety about their child; partly due to the inability of the immature and sick baby to suck; and partly due to practical problems of being able to stay near the baby. It follows that to feed most preterm, sick or low birthweight infants with human milk, some system of human milk banking needs to be set up. In developed countries this can be achieved by systematically collecting, processing and storing donated breastmilk. Is the same possible in developing countries?

Collecting donated breastmilk

There are many different ways to collect breastmilk from donors. The system used in Oxford depends on the collection of drip breastmilk — milk which drips spontaneously from the non-feeding breast in about twenty per cent of lactating mothers.⁽¹⁾ Drip milk donors contribute between 50-100 ml of milk per 24 hours and individual mothers may contribute overall anything from 100 ml to 40 litres of drip breastmilk. Collecting milk in this way avoids 'pumping' the breast which many mothers find unattractive and which requires buying and sterilizing breast pumps. It also avoids asking mothers to produce milk over and above the needs of their own babies — particularly inappropriate in countries where the nutritional state of the population may be marginal.

Practical constraints

However, the collection of donor milk, whether drip milk or expressed milk, in the community depends on the availability of clean water for washing hands, breasts and utensils, access to deep freeze storage facilities and some system for collecting and transporting the donated frozen milk to the hospital special care baby nursery. For these reasons, the development of a community-based donor breastmilk system might not be considered universally appropriate. The alternative is the collection of donor breastmilk within the maternity hospital. Under these circumstances it is easier to maintain standards of hygiene and sterility of equipment. The limiting factor is the relatively small proportion of mothers who stay in the maternity hospital after delivery long enough to establish lactation to feed their own babies and donate milk, drip or expressed, to the milk bank. Nevertheless, such a system exists and appears to work satisfactorily in at least one maternity unit in India.

Processing and storing donated breastmilk

In developed countries there is debate as to whether donated human milk needs to be routinely pasteurized or used in its untreated state, provided the system of collection, transport and storage can be adequately controlled. We have argued in favour of routine precision pasteurization. In this process the amount of bacteria is minimised without damaging the majority of the heat sensitive proteins, and particularly the non-nutritional proteins, present in human milk. It seems likely that the argument for precision pasteurization would be greater in a developing country, although this poses the problem of purchasing and maintaining the equipment together with the appropriate deep-freeze storage facilities.

Is the effort worthwhile?

While appreciating the difficulties which need to be overcome in establishing a human milk bank in a developing country district hospital, there are considerations which indicate that such a scheme should be piloted to assess all aspects of the issue. For example:

- In the future larger numbers of smaller and less mature babies will be looked after and survive in some developing countries.
- The use of artificial formula preparations for such infants would have undesirable effects on the maternity hospital and the local community both in terms of the expense and the negative influence on breastfeeding practice.
- There is an educational role in collecting donated breastmilk for high risk infants, affecting attitudes of parents and health workers both in the hospital and in the community at large about the importance of human milk and breastfeeding.
- Infection is significantly more common among low birthweight infants in developing countries and the studies of Narayanan et al suggest that the use of donated human milk may reduce the incidence and severity of infection among such high risk infants.

Meeting nutritional needs

Mothers should be enabled and encouraged to donate their own fresh milk to their own babies whether they live in a developed or developing country. However, there will always be large numbers of low birthweight, preterm and sick newborn infants whose mothers cannot meet all their nutritional needs and for whom alternative milk is necessary. Formula milk represents one solution to the problem but frequently has serious and undesirable economic and social side-effects. The setting up of appropriate systems for banking human milk may appear difficult but requires closer study particularly in view of the therapeutic and communal advantages associated with it.

David Baum and Peter Rolfe, Department of Paediatrics, University of Oxford, John Radcliffe Hospital, Oxford OX3 9DU.

⁽¹⁾Baum J D 1980 *Preterm milk. Early human development* Vol. 4 (1).

stmilk in the U.K. and India

Passport to life

Is breastmilk banking possible everywhere? Indira Narayanan describes a programme in New Delhi.

In developing countries, setting up conventional milk banks⁽¹⁾ is frequently neither feasible nor desirable. Climatic conditions, lack of resources, poor education, difficulties in maintaining the 'cold chain,' electricity failures etc., preclude collection at home, transport to the special baby units and prolonged frozen storage. Collection of large volumes is also difficult as many mothers are hesitant to donate milk to other babies for fear of their milk supply decreasing.

At the same time it is the high risk infant in the third world who is likely to most benefit from human milk. Here, the most important advantages are protection against infection, and, where the infant's own mother supplies most of the milk, a continued flow and ultimate success in direct breastfeeding.

Where the mother's milk is inadequate, wet nursing may be practised in certain communities, using a suitable relation or friend. For infants who cannot suck from the breast, expressed breast milk (EBM) is necessary. Planned prospective studies have shown the value of human milk⁽²⁾ ⁽³⁾. Based on these studies, practical guidelines for the use of EBM for high risk infants in a developing country have been drawn up for the first time⁽⁴⁾ ⁽⁵⁾. In neonatal clinics collection should ideally be supervised. This is more easily done if the mother comes to the nursery itself. The practice of permitting mothers to stay in the nursery kept for high risk infants, as is done in some units⁽⁶⁾ ⁽⁷⁾, should be more widely encouraged. Besides other advantages, this is by far the best way of supplying human milk to the infants.

Hand expression

In under-privileged centres, direct manual expression of milk into sterilised, wide-mouthed feeding bottles or cups, after washing the hands and breasts with soap and water, appears to be most suitable method. Contamination by this method is less

than with pumps, and involves no cost. We have observed that in some cases, the Kaneson's pump may be acceptable and relatively easier to sterilise. The commonly available hand-operated pumps with bulbs are not suitable as they are associated with excessive contamination. Mothers with infections and those on drugs should not donate milk for other infants. Use for their own babies will depend on the nature of the infection and drugs, and the risk category of the infant.

Correct storage

Milk should be used immediately without processing. Portions for the night and early morning feeds can be stored in the refrigerator just under the freezer compartment, for a maximum of 24 hours. Longer storage, even after freezing, is inadvisable unless definite safeguards exist against electricity failures. On the whole, in developing countries, collection when required, or a 'walking milk bank' system is likely to be more suitable. At present, we are evaluating the cost-effectiveness and feasibility of collecting extra milk to supplement our needs from educated women who return from maternity leave to work in offices and schools. This practice can also benefit the mothers as it relieves fullness during working hours and helps promote milk flow for their own babies.

For home deliveries and units such as ours which practise an early discharge programme, EBM is of great benefit in the home care of low birthweight and preterm babies. The freshly collected milk can be fed with a boiled spoon or bottle (with a soft nipple) until the baby can accept direct breastfeeding. Allowing the baby to suck intermittently at the breast will help stimulate milk flow. Non-nutritive sucking on a pacifier has been shown to promote earlier development of sustained sucking in a preterm baby. Surely there can be no better pacifier than the breast itself.

Avoiding contamination

It could be argued that, with under-privileged mothers, contamination of the milk is likely to occur. Our earlier studies have shown that some concentration of organisms including enterobacteria is not necessarily harmful to the infant⁽²⁾ ⁽⁷⁾. This, however, does not mean that one can be careless about the handling of human milk. Mothers and health personnel should always be carefully informed as to how to avoid contamination or at least to keep it to a minimum. It is also important to consider that, in such families, contamination of other animal milks and formulae can occur to a greater extent, and that this will be without benefits of the unique protective factors present in human milk.

Breastmilk is the birthright of every baby. For the high risk infant in the third world it is a passport to life.

Indira Narayanan, No. 7 Type VI Quarters, M.A.M.A. Campus, New Delhi, 110002, India.

⁽¹⁾ Williamson et al 1978. *Organisation of raw and pasteurised human milk for neonatal intensive care. British Medical Journal* 1 pp 393-396.

⁽²⁾ Narayanan I et al 1980. *Partial supplementation with expressed breast milk for the prevention of infection in low birthweight infants. Lancet*, II pp 561-563.

⁽³⁾ Narayanan I et al 1982. *A planned prospective evaluation of varying quantities of human milk in the prevention of infection in high risk low birthweight infants. Acta Paediatrica Scandinavica* 1, pp 441-445.

⁽⁴⁾ Narayanan I et al 1981. *Management of expressed breastmilk in a developing country. Journal of Tropical Paediatrics*, 28, pp 25-28.

⁽⁵⁾ Narayanan I 1982. *Human milk in the developing world — to bank or not to bank? Indian Paediatrics*, pp 395-399.

⁽⁶⁾ Liebhaker M et al 1981. *Comparison of bacterial contamination with two methods of human milk collection. Journal of Paediatrics*, 67, pp 565-569.

⁽⁷⁾ Narayan I et al 1983. *Bacteriological analysis of expressed human milk and its relation to the outcome of high risk low birthweight infants. Indian Paediatrics*, 20, pp 915-920.

Still set-backs

With the introduction of ORT, there has been fresh reason for hope in the management of diarrhoea and dehydration. It is however disappointing to still find that not enough emphasis is laid on ORT in the various teaching institutions and that little importance is attached to refresher courses for those not familiar with the concept. It is still common to find a health worker who will not correctly give ORT to a dehydrated child even when UNICEF oral rehydration salts packages are available.

In hospitals it seems a lot easier to set up an intravenous drip for an otherwise moderately dehydrated child than to sit by the bedside and explain to the mother what to do when the child is vomiting. 'Pinches' of salt and sugar seem easier to explain to a mother in the clinic or on discharge from the ward than the correct 'measures' even where spoons and other measures are readily available.

This sort of experience with many medical workers accounts for our failures with ORT. It is my belief that the information in *Diarrhoea Dialogue* will help us to overcome these set-backs.

Dr Silver Bahendeka, Nyabondo Hospital, P.O. Box 75, Sondu, via Kisumu, Kenya.

Technical and practical information

We have been receiving your bulletin *Diarrhoea Dialogue* regularly. We find it very useful as we are getting relevant information on various issues on diarrhoea, ORT, infant food etc. We not only get technical knowledge from *Diarrhoea Dialogue* but also practical problems in the field. We pass on useful information from *Diarrhoea Dialogue* to all our members through our newsletter.

Thank you very much for sending us 15 copies of *Diarrhoea Dialogue*. Many of our member institutions are interested in receiving it. We have a membership of 69 institutions in Gujarat. The majority of them are working in remote tribal areas where we try to provide such useful information, materials etc. I wonder if it would be possible for you to send more copies of *Diarrhoea Dialogue* to us so that we can meet the needs of our member institutions. I hope you will oblige us with the same. I would also be very grateful if you could send 3 sets of all the issues of *Diarrhoea Dialogue* for our office and reference purpose.

Kirit Sha, Organising Secretary, Gujarat Voluntary Health Association, Newman Hall, P.O. Box 4002, Ahmedabad 380009, India.

Rural health care in Turkey

I am a doctor working at a countryside health unit. I graduated in July 1983 and was appointed as a GP as a result of a new law making this service obligatory for two years.

This health unit is located near a very small and impoverished rural community. We are responsible for a total population of 11,000, including remote village people around. South-eastern Anatolia is perhaps the most undeveloped and superstitious part of the country, thus we encounter (I, a health technician, a nurse, two midwives and other assistant personnel) all of the health problems crystallized in a small area.

Then we would be very happy to receive *Diarrhoea Dialogue* and it would add much to our practice.

Dr Yanki Yazgan, Merkez Saglik Ocagi, Oguzeli, Gaziantep, Turkey.

Condensing research

Thank you very much for the time and effort it takes to sift through the

volumes of material appearing on diarrhoea research, and condensing it into an easily readable form. We use *Diarrhoea Dialogue* as a resource for in-service education programmes for health workers.

The staff, Christian Health Association of Liberia, P.O. Box 1046, Monrovia, Liberia.

Harmful beliefs

Christine Ansell and Pauline Wright's article: Combining Science with Tradition (*Diarrhoea Dialogue* 15) filled me with interest. In many places in Africa as well as Asia traditional beliefs are held very strongly. In my native Sierra Leone some women do not breastfeed their babies in the belief that their breast milk is "bad" i.e. the milk in their breast is infested with worms thus making it unfit for their babies. The example above is only one in a complex heritage of traditions or taboos. Perhaps the wonderful professional achievement made in Yemen can be applied with similar success elsewhere.

I strongly believe that some of the most serious challenges in the way of prevention and/or control of diarrhoeal diseases in children and infants are false customary beliefs.

Dr Thaim B. Kamara, P.O. Box 1181, Freetown, Sierra Leone.

French DD in the Ivory Coast

Thank you for sending us your questionnaire and for publishing *Diarrhoea Dialogue*. As I mentioned we receive the French edition. We have one African nurse who sees most of our children in clinic and I always see that he receives a copy. Then I give the other copies out as I have them to others of our nursing staff.

Linda Sharp RN, B.P. 111 Ferkessedougou, Ivory Coast, West Africa.

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