Discussion: Session 2

Paper by J.A. Kusin, Sri Kardjati, C. de With and W.M. van Steenbergen

D. Karyadi:

There are three things I would like you to comment on. Firstly, do you also have data on the mother's activities, because this will have an influence on their energy balances. Secondly, do you have collected data on morbidity and mortality of the children in addition to the 12 month period of follow-up investigation. Finally, did you also consider micronutrients in your study, such as iron and other trace elements or vitamins.

J.A. Kusin:

With respect to your first question, we now indeed have more data available on the activities of the women. These data were collected by the field workers who stayed for 72 hour periods with the mothers and who also recorded food intake or the breast-milk intake of the infants. It was observed that the mothers were for more than 50% of the time resting. They just sat down or were doing other work which did not really need much energy; perhaps this can be attributed as an adaptation to the very low intakes. Concerning your second question on morbidity and mortality of the infants I would like to refer you to Dr. Kardjati.

S. Kardjati:

Please let me summarise our preliminary findings of the second phase of our studies in which morbidity and its effect on food consumption were recorded. During one year (June 1987–July 1988) 50% of birth cohorts 1985, 1986 and 1987 in two villages were visited at home at weekly intervals. Cautiously estimated, we found that the total number of days with sickness was between 70 and 140 days a year. This means that for about one third of the time during that period the children were recorded as sick. The amount of food consumption during these periods was reduced by about 20% compared to periods when the infants were not recorded as being sick.

J.A. Kusin:

We observed each child when it was sick and measured its food and breast-milk intake and its activity pattern. Subsequently, we returned to this child when it was healthy and performed the same measurements. The breast-milk intake did not differ but the children did eat significantly less, in spite of being offered enough food. It should be stressed here that there is no taboo about feeding these children while they are ill; they just did not want to eat.

As far as mortality is concerned, the figure was 120 per 1000 during the first year, of which 38% died during the first months and 70% died before the age of 6 months. We found a clear relationship with birthweight. Although we do not dare to conclude that it is caused by supplementation, we found a significant reduction in perinatal mortality in the high energy supplemented group.

H.K.A. Visser and J.G. Bindels (eds.) Child Nutrition in South East Asia, 117–122.

Your last question can be answered very briefly: we did not include any micronutrients like iron or other trace elements in the supplement.

C. Gopalan:
In many supplementation studies, a confounding factor is that the supplement influences the intake during the normal meals. I could imagine that intake of the high energy supplement appears to be somewhat "filling". This is, for instance, also seen in some school meal programs where because of the school lunch, the home dietary intake turns out to be reduced. Could you please indicate how you controlled this factor.

J.A. Kusin:
I fully agree that this is one of the key points in all supplementation studies and although we have indicated this already in our paper, I am pleased to give it some more emphasis in this place. The beauty of the Jamu is that it is not considered a food. We gave it very early before mothers go to work and poor women do not have breakfast. If you look at figure 5, and compare the intakes, excluding those derived from the supplements, in the respective compliance sub-groups of the high energy and the low energy group, you will see that they are highly comparable. We also compared these intakes with those recorded at the same calender months over a period of 5 years and could not detect significant differences. So we are reasonably confident because of the consistency of the data over several years and because of the similarity of the intakes in both groups, that there was no replacement. To conclude, it is also necessary to state that Jamu for pregnant women, which is very specific to Indonesia, will never be shared with anyone because it is too bitter for children and men.

Paper by S.H. Pudjiadi

M.S. Trastonenoyo:
Please allow me to start with a comment about the early introduction of solid food. I think that it is rather dangerous, in the case of failure to breast-feed, to give solid foods straightaway. We should first try to find the cause for these problems and to see whether we can solve them because if you directly give solid foods then breast-feeding will certainly stop.

S.H. Pudjiadi:
Indeed, you are right, if you give solid foods too early when the baby is exclusively breast-fed, lactation will gradually stop. Generally, I recommended in my paper that if possible solid foods should not be given before the baby is 4 months old. If the baby does not receive enough breast-milk, we advise the mothers to feed them more often and to increase the duration of the feedings to at least 5 times a day and at least 20 minutes per feeding. However, if this fails and the mother obviously cannot buy any commercial infant formula, what alternative do we have when also considering that growth already starts faltering.

A.A. Kahn:
I wonder whether the milk insufficiency syndrome really does exist, or whether it is only present in the minds of the mothers because we were unable to communicate with them in time to motivate them for successful breast-feeding.

S.H. Pudjiadi:
In our experience there are definitely mothers who just cannot produce sufficient breast-milk although they are highly motivated to do so and carefully followed all our advice to increase their milk flow.

M.S. Trastonenoyo:
Could I perhaps ask Dr. Kusin about her experiences on this subject?

J.A. Kusin:
In our study we found that poor mothers in general produce breast-milk in quite sufficient quantities

from 0 to 12 months onwards. With the introduction of solid foods, breast-milk production was not reduced because the mothers continued to breast-feed their infants about 12–20 times a day. However, please bear in mind that this refers to a rural population; in urban populations mothers probably just do not have the time or the opportunity to breast-feed their children so often.

M.A. Husaini:

About weaning food, there are, in my opinion, two important aspects. The first is to provide adequate nutrients for growth and health, and the second is to learn and teach the child to eat more diversified foods. This, in my experience also influences its eating habits later in adulthood. Since our government policy to improve the nutritional status focuses on better diversification, I think that we should already start at the weaning age.

S.H. Pudjiadi:

It is rather difficult to change the habits of the population but I think by teaching them, we can achieve the position that a number of less favorable habits will be changed. For this reason we give much advice to the mothers as to what kinds of locally available ingredients, cheap but good, they can use to prepare nutritionally adequate, diversified food for their children.

C. Gopalan:

I would like to counteract somewhat on the general impression this paper made on me. Although the presence of numerous commercial infant and weaning foods in our region cannot be overlooked, I think they simply cannot play a relevant role in solving the main problem we are facing and that is malnutrition. We have been trying for the last 2 or 3 decades to popularise and to advise poor populations to use the foods which are available within a radius of 3–4 kilometers from their own homes and how to fashion nutritious recipies out of those foods, which are within their economic as well as their geographical reach.

Paper by J.J. Counsilman

C.-Y. Yeung:

In Hong Kong we have a very similar situation as with the Chinese in Singapore. I am aware of two surveys to investigate the reasons for this. The first, questioning mothers of the University teaching staff, revealed that social freedom was the most heard reason for not breast-feeding. The second survey, performed in a less privileged group of the community, revealed embarrassment in public as the most imminent reason. In Hong Kong many families live in small appartments (3–400 square feet) housing 6 or more persons, of which quite often 2 are grand-parents. Another important reason mentioned was working requirements. Although traditionally mothers are not allowed to go to work before the end of the first month, the situation appears to be changing as some mothers start working earlier, most likely because of financial reasons.

J.J. Counsilman:

Let me comment on social freedom. In Singapore this is exactly the same; mothers indicate the importance of having the freedom to leave the baby with other relatives. Concerning embarrassment, I do not know what can be done about that. Perhaps one could encourage the mother to use a light cover over the baby when it is being breast-fed. If lactation has already started, the mother could express the milk into a bottle.

D. Sinniah:

First, I would like to state that the observations made about Malaysian breast-feeding practices in Singapore are very similar to those in Malaysia. Secondly, I would like to mention a survey on breast-feeding practices among nurses and doctors in Malaysia. We found that although the incidence of breast-feeding soon after birth was highest with doctors, this fell within one month to very low levels, lower than the national average. The first of the reasons given was work, since maternity leave is only about 6 weeks. The women who did not elect to breast-feed felt that they were not convinced that

breast-feeding was best. They felt that they could feed their babies satisfactorily by preparing the food hygienically and without difficulty. Obviously, doctors themselves need to be re-educated!

E. Suroto-Hamzah:

I think that it would be useful in this respect to make a distinction between two definitions: the initiation and the willingness to breast-feed, respectively. I think that willingness is influenced by cultural opinions, while initiation is influenced by hospital policies. Could you therefore comment on the general hospital policies in Singapore with respect to the efforts which are made to persuade the mothers to breast-feed their infants.

J.J. Counsilman:

It used to be the practice that the mother and baby were separated during the first 24 hours, the traditional Chinese rest period. In 1986 the situation was that 58% of the mothers did not even touch their babies within 24 hours. In the new University Hospital, this has now changed quite drastically and a considerable part of the staff now strongly encourages the mothers to breast-feed. Some doctors even put the babies to the breast right away. This situation mainly applies to the University hospital which is mostly used by the well-to-do Chinese population. I am confident, however, that this changing attitude will be adopted all over Singapore.

M.G.M. Rowland:

I think we have hit some fairly positive notes which we should not lose. Once lactation is established, and I suggest that this is a process which is completed in the first few weeks of life, it is in fact difficult to stop. Therefore, even in countries where women are going out to work, where there are constraints during the day, once a woman has established lactation it is possible to maintain it. This is true whether or not there is initiation of weaning with semi-solid or solid food. The important thing for the pediatric and the allied professions is the establishment of lactation. This is the most fragile period and here we should make sure that we get it right.

J.J. Counsilman:

I completely agree with you, you just cannot overestimate the importance of the role health workers have in stimulating the initiation of lactation. For instance, in Singapore it was found in one study that 79% of the women did not know that lactation may take some time to become established. In another study it was found that around 80% of the mothers did not know that there exists a difference between colostrum and mature milk.

Paper by M. Gracey and H. Sullivan

D. Karyadi:

I would like to know whether you have included in your study approach some anthropologists or sociologists because I think that intervention studies based on an anthropological approach might result in a completely different outcome.

M. Gracey:

You are right and as a matter of fact we did include an anthropologist in our studies. The perspective of the Aborigines with respect to health and well-being are indeed totally different to our own ones. For many years we have tried to get health messages across in a way we felt was appropriate, but all the time we used the wrong words, words which to them were meaningless; even the word "health" has no particular meaning to these people. I think that there are many cross-cultural differences and messages that we have to learn before we can really manage to improve the prospects of health, well-being and longevity in these people.

A.A. Kahn:

I am interested to know whether you investigated to what extent the people in your study could understand the simple health messages you gave them.

M. Gracey:

The question concerning the actual status of health knowledge with the Aborigines is a very important one. Nowadays, education is provided by the Australian government, even in the most remote areas, in their own language next to English and in an appropriate way. Many young Aborigines that are now coming out of school are really quite well-educated in a theoretical sense. But theoretical knowledge is not the same as attitudes and practices and I think that this is the hard core where we have to try to change behavior before we will see the improvements in health we wish to accomplish.

J.J. Counsilman:

Could you please speculate on the levels and types of morbidity in your group now compared to that before settlement times.

M. Gracey:

Knowledge of Australian Aborigines before contact with Europeans is obviously very limited. From skeletal remains and so forth, we know that they had excellent teeth and also became old enough to develop osteoarthritis. From the fact that many of the large collections of skeletons contain large proportions of children's skeletons we may deduce that infant mortality and morbidity were probably really quite high. After European settlement in 1788, the health status of the Aborigines can simply be described as poor, dominated by infectious diseases such as sexually transmitted diseases (syphilis), respiratory infections (tuberculosis) and gastrointestinal infections (typhoid fever). After the referendum in 1967, the Aborigines became stationary in great numbers. They clustered on the fringes of towns in groups that previously would not have lived together. The living conditions were very poor, very poor hygiene and the real environment for the transmission of infectious diseases. The main causes of morbidity in our Aboriginal children were respiratory infections, gastroenteritis, failure to thrive, malnutrition, child abandonment, social problems and what generally could be called child abuse, often associated with parental alcohol abuse.

D.R. Karunaratne:

I would like to ask you whether you have followed your group of infants for even longer than 2 years. I wonder if catch-up growth would be possible once the children become adequately nourished so that at the age of 16 or 18 they might have caught up with those who did not suffer from faltering between 6 months and 2 years.

M. Gracey:

We followed one group for 5 years and they showed no catch-up growth whatsoever. We have also analysed cross-sectional data up to the age of 16 years from which it can be suggested that the nutritional insult that occurs in early life in these infants may be permanent in many of them.

General discussion: Session 2

M.G.M. Rowland:

In many of the papers presented until now, the growth of populations has been presented in relation to the NCHS standards making the point that we should have one international standard and not double standards. I fully endorse that. A number of speakers simply mentioned that during the early part of infancy growth is almost identical. If we observe these curves in detail, for instance those presented by Dr. Gracey, we see that during the early months in infancy growth really is explosive. After the first few months curves flatten off, possibly still following centile lines but almost permanently depressed. My question to the panel is how do we identify growth faltering when it first occurs, and when we might need to intervene on an individual basis.

M. Gracey:

The obtained growth charts, whether the Harvard standard, the NCHS references or local reference values are used, all have limitations. Because of the extreme difficulties in the normal range of variability in growth patterns, I think that for the individual child, growth velocity is much more important than attained growth.

J.A. Kusin:

According to our experiences it will be extremely difficult if you really want to follow an individual child. If you have individual data, the intake data often do not go along with the growth rates. Also there is sometimes a dissociation in weight faltering and length faltering which cannot be explained; why do they still grow well in weight when they start faltering in length?

L. Mata:

Personally, I am not convinced that we can really intervene in this growth faltering in the tropics. I think that the problem with this faltering is not because of a shortage of food but because children are not hungry. This anorexia is in my opinion closely related to the concept of infection. Therefore, I think that the main thing we could do to prevent growth faltering is to provide an environment in which the children will have less infections.

J.A. Kusin:

In the villages where we performed our study all the fully breast-fed infants after 6 months have returned to the breast because of anorexia, which is 30% of the total population. Some mothers provide them with food but they refuse and only want to suckle. So we observed a higher percentage of exclusive breast-feeding at the end of infancy than at an earlier phase caused by a very persistent anorexia.

D.R. Karunaratne:

One of the things that discourages mothers to breast-feed is that they are working or are employed. In Sri Lanka this problem has been overcome by the government insisting that mothers obtain 3 months paid maternity leave, both in the government and in the private sector. I think if this example would be followed in, for instance, Singapore and/or Hong Kong, mothers should be able to feed at least for 3 to 4 months.

M. Gracey:

I appreciate that situation and I believe that it is very important in those countries you just mentioned. For the population we studied, however, the situation is completely different. The mothers do not have to work, they get money from the government anyway.

J.A. Kusin:

We should remember that 80% of the mothers do perform productive work but are not paid. Traditionally, they return after 6 weeks, the culturally sacred period, to work. Although we have been advising mothers for 8 years not to leave their child at home after those six weeks to work in the fields, we have not succeeded yet. To me this means that there is simply a need to work culturally and that lactating women in that culture obtain no protection.

For a change I would also like to raise a question. Dr Mata, can you explain why in Guatemala the incidence of low birth-weight is 42% while the dietary intake of pregnant women is higher than, lets say, the Gambia or our studies.

L. Mata:

We really do not know the answer, but I think one possible explanation is methodological. To obtain reliable figures you must cover the field completely, every single birth in a village, and you have to include also the infants which die in the first few minutes or hours after birth. Therefore, I think that the incidence of low birth-weight infants in parts of Africa and India would also be around 40% if the proper methodology is followed.

R.E. Eeckels:

If we use the cut off point of 2.5 kg for low birth weight infants, we might run a danger of overestimating the relevance of the figures of incidence on prevalence. I think that for the countries we are dealing with here, the definition for low birth weight as is used in the western countries is not the most appropriate one. I would pragmatically define this point as the level from which, if you go further down, mortality will increase very sizably and very suddenly. According to this definition the point would definitely not be 2.5 kg, but much lower – up to approximately 2.1 kg.