Nutrition rehabilitation and the importance of the perception of malnutrition in the follow-up of rehabilitated children

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Nutrition rehabilitation of malnourished children remains a challenge for health services. This paper reports the results of an evaluation of the nutrition component of a mother and child health program in Nepal. The treatment of severely malnourished children was very satisfactory: case fatality rate varied from 4 to 9 % between projects. Follow-up, however, was found to be very poor: only one percent of the discharged children came for a follow-up visit after the first two weeks. The perception of malnutrition within the communities was identified as one of the possible determinants for a successful follow-up and small scale qualitative investigations were organized to gain insight in the topic. Results are quite revealing regarding the perception of nutrition problems. If for severe cases (kwashiorkor and marasmus) awareness of malnutrition did exist in the community, chronic malnutrition seems to be considered as a normal state of being. When a problem is perceived (in severe cases) people will seldom think of it as a nutrition related disease. Results show that the aetiology used by the people differs significantly from the western paradigm, and that traditional convictions put the causes at natural, supra-natural or social levels. The striking point is that no relation is established in the traditional framework between malnutrition (either severe or mild) and food intake of the children. Perception of malnutrition and of its causes influences health seeking behaviour in terms of prevention and treatment. Traditional healers play an important curative role and will often be the first to be contacted. The absence of perception of the links between the shape of the body and nutrients is put forward as one of the possible explaining mechanisms for low follow-up rates observed. An implication of this study would be to revise the health messages delivered to the communities in order to make them culturally more appropriate and relevant.

Key words: Malnutrition, causes, children, nutrition rehabilitation, perception, Nepal, follow-up, 'Peso' women, health seeking behaviour

Introduction

The treatment or nutrition rehabilitation of malnourished children is, even today, a challenge for health services. Over the years we have seen its operational aspects change considerably from a hospital-based type of treatment[1] to a nutrition rehabilitation centre one[2-5], with or without a short hospital phase, and even to a community based one, where the family is, in the main, responsible for the treatment[6]. At the same time treatment schedules have shifted from milk based feeding to schedules using predominantly locally available foods. Admission and discharge criteria have become clinical rather than anthropometrical. Such changes have reduced case fatality rates as well as cost in monetary and human terms. This shift was particularly driven by the high case-fatality rates in hospital based treatments and the frequent relapses[1,7-9]. Research on the role of micronutrients in the treatment and on the physiopathology of severe malnutrition has further increased the success of nutrition rehabilitation[10-14].

However, there is still a plethora of health structures using different types of treatment schedules, personnel, and criteria for admission and discharge. In operational terms very little consensus exists on the treatment of malnutrition.

With the development of the district approach as an operational model for health services delivery, a new role has been found for the health system in the treatment of malnourished children: the increased responsibility of the parents in the treatment, with emphasis on home-based rehabilitation. In these cases the role of the health sector is limited to the initial treatment phase which consists of treating complications and/or restoring appetite, discharging the child on clinical grounds, and supporting the family. The real "rehabilitation" phase is performed at home. Follow-up visits are the link between the health service and the family, and nutrition education is the major means of support. This implies, however, that the family takes up the responsibility for the rehabilitation, that the health facility gives the necessary support, and that the rehabilitation is a priority for the family.

This paper provides some evidence that the perception of malnutrition by the community might be an intervening factor in a successful rehabilitation program and in the transfer of nutrition education messages.

Material and methods

This paper is based on the results of the evaluation of the nutrition component of four mother and child health (MCH) programmes in Nepal, performed on request of the Save the Children Fund UK, in February 1991.

The MCH activities were being conducted in four districts. A clinic provided care to children up to ten years of age and their mothers. Services provided included outpatient care,

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immunisation, antenatal care, family planning and a nutrition rehabilitation unit, where severely malnourished children could be admitted for treatment and feeding. At the same time, mothers received nutrition education and instructions on how to prepare nutritious and high energy foods. Moderately malnourished children and children discharged from the nutrition unit were registered and invited for follow up. At the time of registration, nutrition education and instructions on food preparation were given to those mothers who had not received any previously.

The methodology used for evaluating these activities was that of a participatory type developed by the Nutrition Unit of the Institute of Tropical Medicine (ITM), Antwerp[15]. The objective of the evaluation method is to increase the understanding of both the programme and the situation and reduce the need for data by making the data collection more relevant, and improving the use of the evaluation results. The evaluation is therefore performed with the participation of the programme managers, the implementors and, ideally, the beneficiaries. A workshop is conducted using models of analysis built locally in a participating manner, and ends up with relevant evaluation questions and choice of data, identification of the factors which potentially could interfere with the desired result, i.e. the confounders. In this particular evaluation[16], the workshop lasted four days, after which data were collected in the respective projects in order to complete the information which was lacking at the time of the workshop.

The methodology used for the evaluation was novel in the sense that it was participatory and that it emphasised providing an explanation of the observed results -or the lack of it.

It became clear at the time of evaluation that nothing was done in the programme to alleviate the causes of malnutrition, and it was suggested that the lack of perception of malnutrition could play an important role. Most of the participants agreed that malnutrition was not perceived in the community as a health problem and therefore did not need medical intervention.

Since, during the workshop, it had become clear to the project staff that a nutrition rehabilitation programme should as much as possible ensure the full and sustainable recovery of the child, it was decided to investigate the reasons for the low follow-up which had been observed.

A one week field visit was organised to conduct small scale qualitative investigations. The objective was to learn more about, and gain some insights in the perception of malnutrition and the perception of its causes within the communities as well as on the traditional practices of prevention and treatment. Our work focused mainly on relationships between severe malnutrition, apparent symptoms, mild nutrition expressed as thinness, and 'disease'. Less emphasis was put on the investigation of the relations between the concept of growth and nutrition intake, although the perception of the causes of malnutrition were investigated.

To address the question of the perception of malnutrition as one of the possible determinants of successful rehabilitation of children, rapid assessment procedures (RAP)[17] were used to collect data. The techniques used were focus group discussions and in-depth interviews. A village, Banskarka, was chosen in Sindhupalchok District. The district was chosen because one of the authors was familiar with it.

Three focus group discussions were successively organised with community health volunteers (CHV), traditional birth attendants, and traditional healers. In addition three in-depth interviews were conducted with village men. All respondents were Tamang, the predominant ethnic group in that particular district. The interviews and discussions were conducted in Nepali by a Nepalese health worker trained for the purpose, with the assistance of a sociologist. Guide questions were specifically built for the study (Table 1). Notes were taken during the interviews and data were analysed on a daily basis.

Table 1. Guide questions for focus group.

1. How do you know when a child is ill ?
2. How do you know when a child is malnourished ?
3. What are the problems faced by parents when there is a malnourished child in the family ?
4. How do you feel about a malnourished child ?
5. In your opinion, why does a child become malnourished ?
6. What do you do to prevent a child to become malnourished ?
7. What do you do when a child is malnourished ?

Results

The results of the evaluation of the nutrition rehabilitation units have been reported elsewhere[18]. A summary is provided here to justify and illustrate the relevance of studying the perception of malnutrition in this particular setting.

Evaluation of the nutrition rehabilitation units

Admission criteria were a weight for height (W/H) index below 60%, a W/H index below 80% with a complication requiring supervised treatment, or clinical signs of kwashiorkor. Children with less than 80% W/H without complications were only registered for follow up. The NCHS reference was used to calculate the percentages from the mean.

The type of treatment provided aimed at treating complications while at the same time starting the rehabilitation phase. Antibiotics were administered when necessary, vitamin A in high dosage (200,000 IU) was given, and food prepared in the unit provided. Only locally available foods were used, and different meals were given at different times of the day. Each child had an individual menu based on his or her calculated energy needs. The energy density of the meal preparations were at least 100 Kcal/100 grams. Children with signs of kwashiorkor received an initial diet of 80-100 Kcal per kg per day with salt restriction. Children with marasmus received a 150 Kcal/kg diet with feeding every 2-3 hours. Milk preparations were reserved for the very young infants or for those children who were too ill to swallow. Even in this last group gastric feeding by tube was done preferably with ordinary foods ground and liquefied.

Once appetite returned and infections were under control, the children were discharged and registered for ambulatory follow up. Mothers were invited to come back to the centre once a fortnight with their child. No supplement as take-home ration was provided. The registration consisted in taking bio-data from the child and the family, and in analysing the local situation. The aim was to provide nutrition education relevant to the family situation and more particularly to their food availability.

As far as the treatment of severely malnourished children is concerned, the results of the evaluation can be considered very satisfactory indeed. Case fatality varied from 4 to 9 % between projects. The average time of stay in the rehabilitation unit was 8 to 12 days, depending on the unit. As for the costs, in 1990 these varied from 766 through 1,400 Nepalese rupees (32 Rps = 2 US $) which represents an average cost per day of 4 to 5 US $ per child. This cost includes the food given to child and caretaker, salaries and maintenance of the unit. Drugs are not included in the cost estimate (not available).

These costs relate to all admitted children, including ill children needing supervised treatment. But their treatment in terms of drugs and feeding is very similar to the one malnourished children receive. If we would however discard the non malnourished children the proportional staff cost would increase considerably, doubling the cost/child/day to approximately 9 US$.

The low case fatality rate and the short duration of the stays are consistent with the intention to treat and admit only as long as necessary. The programme logically aimed to support the full recovery of the children, using nutrition education and follow-up sessions. The follow-up however was found to be very poor, with

only one percent of the discharged children coming with their caretaker for a follow-up visit after the first two weeks. After that almost no one returned.

Perception of malnutrition - main findings and discussion

Given the techniques used and the scope of the study, results can not be considered as representative of the beliefs of the population of the district, and no external validity can be attributed to the results outside the investigated areas. Nevertheless results are quite revealing regarding the perception of nutrition problems within these Nepalese communities, and they are indeed consistent both with observations made elsewhere, and with modern health seeking behaviour theory.

The fact that the research took place in an area where health related activities were undertaken by the programme can be viewed as a favourable bias, since in this situation one would expect to find less traditional beliefs due to the expected exposure of the community to modern health messages.

Perception of the malnutrition problem

When considering lay perceptions of malnutrition, we distinguished between chronic malnutrition and severe acute cases (Table 2).

Table 2. Perception of malnutrition in relation to degree of problem.

	Severe cases (kwashiorkor, marasmus)	Moderate malnutrition
Perceived as a problem	Yes (serious)	No
Children considered ill	Yes	No
Perceived causes	Supra-natural Social Natural	Natural
Relation with food intake	No	No
Health seeking behaviour	Traditional healers first	Non applicable
Transmission	Direct or indirect contact (wind, shadow)	Non applicable

For severe cases such as kwashiorkor and marasmus, awareness did exist of malnutrition in the community. Even if there was no specific word to describe severe malnutrition, parents did perceive that "something happened to their child" and would consider him or her as ill. According to the faith healers "the parents fear the child may die".

Although in Nepal, thinness can be associated with weakness and vulnerability[19], a thin child however would not be defined as 'ill' by the parents, neither would thinness be viewed as the expression of a disease. The phenomenon is not perceived as important. Many other things which happen in the course of life will be regarded as much more important. Traditional healers, when asked to compare malnutrition with other "diseases" (diarrhoea, fever, cough, etc.) viewed it as a minor problem. Chronic malnutrition seems to be considered as a normal state of being and a concept of malnutrition as such does not seem to exist. This has been observed in other societies as well: according to Jansen[20], the Xhosa in South Africa have no concept of malnutrition as such. In an attempt to generalise, de Garine advances that in traditional societies the shape of a chronic malnourished body is considered as standard[21].

Perception of causality

Perceived factors which cause malnutrition enumerated by the various categories of interviewed people were numerous. We have arranged them according to the general classification proposed by Kleinman[22] who, in lay theories of illness distinguishes natural, social and supra-natural causes.

In our study, malnutrition was sometimes viewed as a natural phenomenon related to the 'strength' of the body of the child at the time of delivery. One respondent explained for instance, that if a child is to become malnourished, 'normally' he or she should have died during the mother's pregnancy or in the first months following delivery.

Causes which can be classified as supra-natural were very commonly encountered. Malnutrition was explained as the result of such things as a God's curse, a spirit threatening the child, or "a wizard eating the child slowly". This belief has been observed previously by Stone[19]: some spirits attack people to feed on them when hungry. The child could also be under influence of an evil power called "Lagu". Evil spirits and gods were also reported to cause diarrhoea. Stapleton[23] suggests that since malnutrition, diarrhoea and dehydration commonly occur together, both the terminology used to describe them and the perception of their causes will present strong similarities. This author also formulates the hypothesis that the association with supra-natural causes is more likely to be strong for severe cases or when accompanied by other worrying symptoms of dehydration.

Finally, in the category of social causes, we encountered the contact with a "peso" women. A "peso" women can be defined as a woman whose children have died either during pregnancy miscarriage, at delivery or in the early stages of life.

The striking point in the above results is that no direct relation is established in the traditional framework of the community between malnutrition (either severe or mild) and food intake of the children. This result is in line with the literature[21] which shows that if causal relations between eating and fattening or between fasting and loosing weight are usually perceived in traditional societies, this relation does not apply to chronic malnutrition i.e. when the process develops slowly, nor does it apply to severe forms of malnutrition; especially when vulnerable groups, such as children are concerned. In many traditional societies, where kwashiorkor is a common phenomena, the nutritional cause is not recognised. The coincidence of time with the arrival of a new born baby is perceived however and, most often, the newborn baby is believed to, one way or another, bewitch or infect the older[10].

"Transmission" of malnutrition

Other results relate to the way malnutrition was assumed to be transmitted. Transmission could involve a kind of direct or indirect contact with for example a "peso women", or another malnourished child. The "contacts" were various and could take different forms, such as eye contact, wind, contact with a shadow, or heat of body.

An interesting finding, in terms of the project's operations, was the presumed role of the contact of a child with the weighing bag at the health post. One of the traditional birth attenders interviewed said that the belief in this form of transmission deterred some of the mothers from coming to the health post. Interestingly enough, Mull[24] reports a similar finding in Pakistan (Karachi) where weight loss and diarrhoea are attributed by mothers to the weighing scales health workers used for growth monitoring.

General discussion

If one accepts that people generally act rationally within their own frame of values and convictions in order to respond to given situations, then logically the above perceptions of malnutrition and of its causes will influence their health seeking behaviour in terms of prevention and treatment. In fact, according to Kleinman[22] engaging in a specific health care behaviour implies at least the three following steps: perceiving and experiencing symptoms; labelling and valuing the disease; and sanctioning a

particular kind of sick role. As can be expected, both the treatment and prevention of severe malnutrition is consistent with the perceived causes.

For chronic malnutrition one can expect that symptoms will seldom be perceived. When perceived, the illness will still have to be defined, labelled and valued. Most probably it will not rank high. This could in itself be enough to explain the low follow-up rates when the child's condition improves, that is, once they do not present symptoms such as diarrhoea or fever.

When people do perceive a problem (in severe cases) they will seldom think of it as a nutrition related disease since results show that the aetiology used by the people differs significantly from the Western paradigm, and that traditional convictions put the causes at natural, supra-natural or social levels. The fact that these causes can be of different nature (natural, social or supernatural) should not be a surprise: similarly to Western modern explanations, lay theories of illness aetiology are multi-causal and certain causes will be linked together in particular cases.

Treatment and prevention of severe malnutrition will be consistent with the perceived causes which will permit to label and value the disease. In treatment, traditional faith-healers play a very important role and will often be the first to be contacted. It is remarkable enough that some community health workers, in spite of all the training undertaken, when confronted with a malnourished child, will first see the traditional faith-healer rather than referring the child to the health post. Through the in-depth interviews of fathers some insights were gained on the traditional treatments which consist of complex rituals.

The problems encountered with the follow-up of the discharged children should therefore not be a surprise. Since the relation between food intake and the disease is not well established in the traditional framework, parents will rationally not see the usefulness of following up the child. Furthermore, if symptoms come back, and since the children are discharged quickly, before being fully rehabilitated, the parents could interpret this as a failure of modern medicine which in turn will reinforce the possibility of a supra-natural event afflicting the child and the call for the traditional faith-healers.

Ways of prevention are also related to the perception of causes since this includes, for example, keeping the child away from a "peso women" or keeping the child from sleeping in certain positions.

Although the discussions were not specifically designed to test the degree of penetration of health messages in the community, some evidence collected indicate that "modern" health messages do, to some extent, penetrate the community. For instance, prevention of malnutrition is being associated with immunisation of the child, injections to mothers during pregnancy, use of contaminated food or bad clothing. The extent to which these messages reach the community members which are not in contact with health professionals, and whether these messages result in attitudinal and behavioural changes is unknown, however.

Conclusion

As we have seen in this particular study, the follow-up rate is low and patients are felt to have been lost. In this situation the perception of malnutrition and in particular the absence of perception of the links between the shape of the body and nutrients is put forward as one of the possible explaining mechanisms. In other communities as well as this one, the relapses might also be explained by the same phenomenon.

A first implication of this would be to revise the health messages delivered to the communities in order to make them culturally more appropriate and relevant. It has been shown in a study concerning the Primary Health Care program in Nepal[25] that health messages are often irrelevant in regard to the needs of the communities. These are often based on a negative view of traditional medical beliefs and local culture, which are not taken into consideration in the design of the messages. Launer and Habicht[26] in an article on weaning practices of Madurese mothers also attribute the failures of nutrition education components of nutritional programmes to the differences between concepts underlying educational messages and those motivating mother's behaviour.

Furthermore, since health seeking behaviour is a social and not an individual process[22], and because social interaction modifies individual perceptions, nutrition education should be targeted towards the community as a whole and not be limited to mothers or these individuals who go to the health post[27]. Creating links between the medical sector and traditional healers should also seriously be considered.

In order to advance in this direction, more in-depth and systematic research is needed in Nepal to build a clear conceptual framework of the communities' key concepts about nutrition and health and the practices related to them, using anthropological techniques. Such a framework could in turn help to identify vulnerable factors on which to build health messages more suited to those concepts motivating mother's behaviour.

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營養康復與營養不良洞察力在隨訪康復兒童中的重要性

摘要

營養不良兒童的營養康復仍然是健康服務的需求，該文報道了尼泊爾母親和兒童的營養評估．他們發現營養不良兒童的治療效果是非常滿意的．雖然被隨訪的兒童數目很少，但是，在隨訪的病例中死亡率只有4－9%．營養不良的洞察力被認爲是成功隨訪和研究的可能決定因素．如果在社會中發現有嚴重病例(如惡性營養不良和嚴重消瘦)，往往可考慮爲慢性營養不良，但是人們很少會想到這是一種與營養有關的疾病．傳統認爲是由于自然的，超自然的或是社會的因素引起，也就是説没有想到這是兒童的食物攝取和營養不良(嚴重或中度)之間的關系．營養不良洞察力可幫助該病的預防和治療．傳統的醫生起到重要的治療作用，并往往是病人首先接觸的．缺乏對病人的體形和營養素之間洞察力將使隨訪率下降．該研究將會修訂健康信息，并使其更適合于當地的文化背景．

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