

SECOND THOUGHTS ON GROWTH MONITORING

Growth monitoring or regular weighing of children has been practiced in some form or the other since the beginning of the century. Well baby clinics were started in the developed countries by concerned volunteers and health and nursing personnel and this was the beginning of what was called child welfare. The concept of an Under Five Clinic was started in Africa by David Morley and others to identify children at risk so that they could get more attention. A growth card which contained quite a bit of family and obstetric history of the mother was an integral part of an Under Five Clinic. In Delhi (and I am sure in many other cities) there were Municipal Health Centres which took care of mothers and children and weighing the children whenever they attended the clinic was an integral activity of the centre. I was associated with one such centre in the fiftys, and that is where I learnt my basic child health. A few mothers would ask us to write down the child's weight on a piece of paper, so that they could show it to their husbands when they came home in the evening. We ran our out-patients in Safdarjang Hospital as an Under Five Clinic where children were weighed, relevant nutrition advice was given and quantity of food demonstrated, immunization was carried out, relevant treatment was given, for the

child's complaint and mother was given family planning advice. As a matter of fact we ran a family planning clinic right in our pediatric OPD! The growth card used was in a sense a mother and child card which the mother kept(1).

UNICEF advocated the strategy of GOBI (growth monitoring, oral rehydration, breast feeding and immunization) in 1982 and the momentum for growth monitoring (later called growth monitoring and promotion) increased. There has been support of WHO also for this, as well as of several other agencies. Facts for life published by UNICEF, WHO and UNESCO in 1990 lays great stress on growth monitoring (GM).

GM has several pre-requisites. There should be a trained worker well versed in weighing and charting, there should be a reliable weighing scale, growth charts, *etc.* and there should be sufficient time and opportunity for interaction with the mother, so that she can understand her child's growth status and act according to the advice given. The worker would have to be well versed in the child's nutritional needs keeping in view the dietary pattern of the family and what the family can afford. The numbers would have to be small if all these activities have to be carried out. However, by and large, weighing is done as a ritual and considered an end in itself, rather than means to an end. The date of birth and hence age of the child is often unreliable and more weighings are done from 3-6 years rather than in the younger age, even though the problems of malnutrition and stunting are mostly in the younger children. These are difficult to reach and are not well covered in any programme.

Often the most needy and underprivileged 20% do not come to the centre or clinic and hence remain unreached. Unless there is a follow-up action, GM becomes meaningless.

It has been postulated that GM provides a focus for integrated child services. However, according to Gerein(2), if the health service has not reached a minimal level of functioning, GM will be simply one more poorly performed task. She has concluded that taking into account the low sensitivity and specificity of anthropometry, inaccuracies in weight measurements, low and non-representative coverage and high incidence of growth-faltering in young children, the benefits of using GM as a screening mechanism appear to be few.

In my earlier enthusiasm, I wrote in 1986(3) that GM seemed an excellent tool for assessing the growth and development of a child, for detecting the earliest changes in growth and to bring about appropriate responses to ensure that the growth continues uninterrupted. GM was supposed to provide an excellent opportunity to give other primary health care services as well as improve women's participation in the care of their children and their interaction with the health worker. However, observing GM over the years, the above postulation and hope has not materialized.

ICDS Programme which started in 1975, has weighing of children as one of the major activities, with the aim of assessing their nutritional status and giving supplementary nutrition. There is no evidence of weighing children in our primary health care programme at all. In ICDS, each Anganwadi has been supplied with a salter type of spring scale (TANSI in the South) and the anganwadi worker (AWW) classifies the children according to their nutritional grade and reports it to the concerned

authority. Earlier there were individual growth cards, but later they were supplied with cards bound in a big register, so that they would not get lost. Usually, the AWW writes the weight in a book or a sheet of paper and much later transfers it to the growth chart in the register. Thus, she does not see the direction of the growth curve at the point of weighing the child and cannot make it "visible" to the mother. With emphasis on GM the ICDS staff were given the relevant training and orientation and NIPCCD produced a manual on GM. However, the charts retained the lines for nutritional grades and the AWWs, were supposed to report monthly on the number of children in the various grades and compare with the earlier reports to judge whether there had been any improvement in the nutritional level of the cluster of children or not. So, while one talks about GM, what is actually being carried out is weighing to ascertain the nutritional grade and that too mostly of children 3-6 years. This is linked with nutrition supplement, the severely malnourished getting additional ration. The growth trajectory of an individual child is thus ignored. No specific health and nutrition advice is given to the mother. Several evaluations of ICDS have reported the poor status of health and nutrition education with or without GM.

Not all children gain weight regularly every month. The reference standards have been made by pooling the weights of a large number of children at each point, and so they show a smooth curve, but many perfectly healthy children do not follow that smooth pattern.

Gopalan and Chatterjee(4) have cast doubts on the applicability and feasibility of GM as an essential component of the child health care package at the primary and domiciliary levels. The enormous

expenditure in time (training and service) and money involved in an operation, which at best could make no more than an indirect contribution to the promotion of child health, has been pointed out by them. It is possible that in adequately staffed MCH clinics and where time and resources permit, longitudinal measurement of growth could be a useful tool for promotion of child health/nutrition. However, it is doubtful if it can be made an integral and central feature of primary health care programme where workers are few and inadequately trained and not equipped with intervention strategies(5). According to Nabarro and Chinnock(6) effective GM activities are not easily implemented and perhaps their widespread advocacy was not a result of a careful review of policy and programme research. They called it inappropriate promotion of an appropriate technology. Gopaldas *et al.*(7) on the basis of examination of data covering almost 4000 children under six years of age in the ICDS programme in Chandrapore and Panchmahal where there were numerous additional inputs in training and supervision, found that almost half the children had never been monitored and another 25% were monitored inadequately. They also reported that mother's understanding of the growth chart was negligible. Analysis of covariance of the effect of GM on weight for age and morbidity controlling for socio-economic status and other programme services showed that GM did not have an impact on the nutritional and health status of children. Maternal illiteracy seemed to be a major hindrance in the success of GM. It is doubtful if illiterate or semi-literate mothers can comprehend the X and Y axis on the growth chart. According to the USAID report on ICDS(8), AWWs were too preoccupied with the

logistics of weighing numerous youngsters and recording the results to give any one mother much individual attention. If a technique is so difficult that inspite of good training, supervision, availability of teaching aids, *etc.* the mothers have not been able to comprehend it by and large, then one wonders whether it is the right technique for that level.

GM has been integral part of Tamil Nadu Integrated Nutrition Programme (TINP). There is good training and supervision and considerable health and nutrition education and community participation. A great deal of time of the workers is spent on weighing and charting, mainly because whether the child is eligible for food supplement or not depends on that. Would the results have been different if GM was left out or made less rigorous and other components continued even with more vigour? Shekar and Latham(9) postulate that in TINP regularity of weighing was associated with improved child nutritional status and that benefit of GM existed over and above supplementary nutrition. However, having had the opportunity of evaluating TINP, I wonder if more time spent on health education would not have been equally or even more effective rather than fine tuning a little weight gain or loss. Shekar and Latham do not seem to give any convincing evidence that GM *per se* has contributed to improved nutrition. Children were recruited in the programme only after 6 months of age when a considerable number had already become malnourished. Now that TINP has been expanded, it would be interesting to see if GM can be continued in the same way as before.

In RUSHA, Tamil Nadu(10), the experience with GM has not been rewarding. However, active promotion of primary health care and a strong nutrition educa-

tion programme showed a significant nutrition improvement even in the absence of GM; as revealed in the nutrition surveillance of 1988 and 1992. It was concluded that time spent on providing inputs for the growth of children was more important than the regular weighing of children.

In another very good NGO project, in spite of very regular GM, growth faltering was rampant and it seems that GM had made no difference to that at all. The health workers just did not know how to respond and what advice to give. Mothers understand the nutritional grades in terms of the old terminology fractions of a rupee (16 annas, 12 annas, 8 annas and 4 annas for normal, first grade, second grade, third grade malnutrition, respectively) and not the trajectory of growth. Besides, GM becomes meaningless if those who identify growth faltering cannot do anything about it. The level of malnutrition has come down significantly, but that seems to be due to overall good health and nutrition advice, timely treatment of infections and involvement of the community. No nutrition supplements are given in the project.

A new terminology—Triple A Cycle—has now been introduced. This means assessment of the situation, analysis of causes of the problem, followed by action based on analysis. An assessment is made through weighing the child, an analysis is made through comparing the child's weight with the previous weight and growth retardation or positive growth is observed. The child's caretaker is counselled about possible causes and suggestions are made for relevant action. If any link in Triple A Cycle is missing, GM does not work. Experience shows that there would be many missing links.

Evaluation of GM was carried out in seven countries (China, Ecuador, Indo-

nesia, Malawi, Thailand, Zaire and Zambia) under the guidance of Evaluation Office and Nutrition Cluster Programme Division of UNICEF. The technical review meeting was held in May 1992(11). The report showed that almost three quarters of child care-takers understand growth curves. However, the coverage of children left much to be desired. In Indonesia the coverage was 56% for children under 12 months, but declined as children get older. In Zambia full coverage was 36% for the infants and 12% for 3-4 year old (opposite of the Indian situation). In Thailand there was full coverage for half of the children in "good" area and one in four in the "poor" area. In all seven countries, few actions aimed at improving the nutritional status of children were reported. The workers did not seem to know what to do in a particular child's case. The conclusions of the workshop were that growth promotion through weighing and charting is the most resource demanding method. Three strategies were suggested: (A) Growth promotion without weighing; (B) GM with selective weighing and charting; and (C) GM with full weighing and plotting.

The recommendations were that in most situations, it is preferable to go through steps A and B before moving on to step C. This seems to be in conformity with the views and experience of many workers involved with GM. That GM promotes growth has never been proved. It is the other inputs that are crucial and without them GM becomes meaningless.

From a review of the literature and by studying the operation of GM in several programmes and projects and one's own experience, the conclusion seems to be that hardly any of the pre-requisites of successful GM mentioned earlier are at present functional. We are at the first option *i.e.*,

growth promotion without weighing or at best with selective weighing. Since the prime aim is to improve the health and nutrition of children, specific inputs regarding these such as advice regarding breast feeding, improving mother's knowledge regarding nutritional requirements of children, food intake during and after an illness, helping mothers to do this keeping in mind various constraints of income, food taboos, dietary pattern of the family, constraints of time, *etc.* prevention and early management of morbidity, preventive measures such as immunization, environmental sanitation, safe water *etc.* are crucial. The priority group is 0-3 years. Time spent on these and getting the mother's and family's active participation would be much more rewarding than haphazard weighing without any clear understanding of why it is being done. Will there be a need to go to the next strategy, *i.e.*, GM with full weighing and plotting? Perhaps not.

Shanti Ghosh,
Pediatrician and MCH Consultant,
5 Sri Aurobindo Marg,
New Delhi 110 016.

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