

**Growth
Promotion
for Child
Development**

**Proceedings of a
colloquium held in
Nyeri, Kenya,
12-13 May 1992**

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Growth Promotion for Child Development

Proceedings of a colloquium
held in Nyeri, Kenya, 12-13 May 1992

Edited by
J. Cervinkas, N.M. Gerein, and Sabu George

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Growth Monitoring in Primary Child Health Care in Developing Countries

C. Gopalan, President, the Nutrition Foundation of India, New Delhi, India

Introduction

More than 7 years ago, the Nutrition Foundation of India brought out its publication, "Use of Growth Charts for Promoting Child Nutrition — Review of Global Experience." That publication, although recognizing the merits of growth monitoring in appropriate selected situations, sounded a note of caution against pushing growth monitoring as an universal, 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 was pointed out; as was the fact that, given the ground realities, this expenditure could frequently prove to be infructuous and wasteful. We elaborated this view point in subsequent publications of the Foundation.

Our point of view was, of course, not in consonance with the general support that was then being extended to the introduction of growth monitoring on the public health scene, and ran counter to the optimistic reports of enormous "benefits" that growth monitoring was claimed to be conferring on poor children around the world. During the last decade, millions of dollars worth of weighing scales manufactured in Europe have been shipped to Africa and Asia; and millions of hours of work by health personnel in developing countries have been expended on this operation. *With what result?* There are apparently many who have begun to ask this question now. There is, at long last, a genuine desire for an objective and sober reappraisal of the place of growth monitoring in primary child health care.

It may be useful, at the outset, to restate the obvious. It is clearly not (and indeed it cannot be) anybody's case that periodic weighing of children can, by itself, bring about improvement in child health and nutrition. Weighing obviously cannot confer any direct biological benefit. All that can be claimed is that weighing could prove useful in facilitating (and possibly in providing support and

direction to) those measures that could directly and positively contribute to the betterment of the nutritional status of children. In short, growth monitoring (meaning the weighing operation) may be a convenient peg on which to hang other truly essential components of child health care; as we had said in an earlier publication it is no more than a means — indeed not even a means to an end, but a means to a means, namely, nutrition education and intervention.

It is necessary to remind ourselves of this basic fact because, in quite a few reports that have claimed "success" for "growth monitoring," the criterion of that success has been no more than that the workers in some projects, who had been specially trained for the job at considerable expense, were able to record weights accurately and plot them correctly on the chart. All that this shows is that women of the village, with some level of education, *can be successfully trained* to carry out weighing. This is gratifying as far as it goes because even this "first-order" success currently seems to elude a high proportion of village-level workers supposedly trained in growth monitoring. What these reports fail to tell us, however, is whether such success in weighing was necessarily reflected in success in improving child health and nutrition and, more important, whether successful weighing was found to be a necessary and essential prelude to successful child health promotion.

It is possible that in adequately staffed MCH clinics, and in select project situations, where time and resources permit, longitudinal measurements of growth of children could be a useful tool for promotion of child health and nutrition. The issue that needs to be addressed here, however, is whether the injection of growth monitoring for individual children in poor communities around the world, as a universal integral and central feature of public health programs of primary child health and nutrition care (including domiciliary health care) has proved to be a wise and feasible strategy.

In discussing this issue, we do not propose to attempt an exhaustive review of all publications on growth monitoring subsequent to our earlier publication of 1985! The purpose will be served by a critical examination of just a few selected recent publications. We start this discussion with two recent papers, one by Shekar and Latham (1992) and the other by Nancy Gerein (1988). Between them, these papers have attempted to articulate practically all arguments on both sides of the issue. Shekar and Latham present an optimistic picture, justifying weighing as an integral component of child health care, whereas Nancy Gerein raises doubts about the validity of this strategy and asks the question "Is it worthwhile?"

Shekar and Latham, on the basis of analysis of selected data from the Tamil Nadu Integrated Nutrition Project (TINP), have concluded that "growth monitoring (as proxied by regularity of weighing) in TINP, was associated with improved child nutritional status." The authors have been careful to use the word

"associated" in their above conclusion, and the "growth monitoring" they refer to was not just the weighing operation alone but the entire package of services that went with it in TINP. The authors claim that the evidence shows that "the benefits of growth monitoring exist over and above these of supplementary feeding," the evidence for this conclusion apparently being that even those children who did not receive supplements as part of the package also benefited; but even in this latter case, the growth monitoring they refer to was not the isolated weighing operation but included the education and advice components of the package, although not the supplement. The authors point to "the need for further research to find out how much of the benefit is due to growth monitoring (and subsequent feeding) and how much is attributable to the educational strategy." However, they conclude that "for the true proponents of growth monitoring such an exercise may seem of only academic interest." Their interest lies primarily in showing that the *combined package* of growth monitoring works, as has been shown in TINP.

The paper by Shekar and Latham thus fails to come to grips with the crucial question if the weighing operation had been totally left out of the package, leaving all other components in place, would the result have been any different? It may be legitimately argued that if the workers had spent the same amount of time they had spent with each family *without* being called upon to carry out weighing and charting, they could have given an additional 10 minutes to each family at each visit for the purpose of education, advice, and direct help. The result in terms of improvement in child health and nutrition may have been far more gratifying. Where success of the worker is measured by the supervisor, on the basis of the accuracy of the workers weighing and "plottings," it is reasonable to expect that the worker would spend more time and attention to ensure the correctness of the weighing operation rather than on the all important follow-up action, which does not easily lend itself to achievement audit. In fairness to Shekar and Latham, however, it must be stated that they were in no position to provide answers to these crucial questions for the reason that they were only evaluating a set project on the design and components of which they had no control.

A large chunk of the time for training of village-level workers and supervisors in TINP had been devoted to training them in the mechanics of weighing and growth charting (3 months). If this time had been devoted to training, providing information, and imparting skills with respect to the following, the results could have been far more gratifying:

- Practical ways by which diets in poor households could be improved with the existing foods available in the villages and within the reach of the poor (regional and seasonal diet calendars).

- Methods of preparation of nutritious receipts for weaning diets in children in poor households.
- Ongoing developmental programs at the village level and how they could be used for maximal advantage.
- Available opportunities for mothers to obtain vocational training in income-generating occupations.
- How and where family planning services could be obtained.
- How to win the confidence and continued cooperation of the village community.

Also, the country would have been saved the enormous expense incurred in import of weighing scales, their frequent repairs and replacement; on coloured growth charts; and on elaborate record keeping. Indeed, currently, adequate focus on all the essential aspects referred to above is lacking, even in the training of workers engaged in TINP, presumable for the reason that these vital components are crowded out to find time for what is perhaps wrongly perceived as the essential element of the package, namely, the weighing. Training with respect to all the essential elements mentioned above can be successfully imparted within the 3 months now being taken up for training in weighing and charting alone.

A legitimate and truly compelling case for weighing as an essential and indispensable component of the child health care package can arise only if it is clearly demonstrated that in the absence of the weighing and charting operation, it will be impossible to deliver the other components of the package. No paper that has claimed success for growth monitoring has demonstrated this. It cannot be argued seriously that without the benefit of a growth chart the worker will not know what advice to give. After all, more than 85% of children in poor communities in the regions where growth monitoring is now being recommended suffer from undernutrition and growth retardation of varying degrees. The nature and the causes of such undernutrition are fairly uniform and are known to all health workers in a given region. Is it necessary to measure the degree of growth retardation at a given point of time with mathematical precision in each individual case, and at each point of time, to give meaningful advice? Is the advice going to be so rigorously "case specific" like, say, deciding on the dosage of a potent drug for a case suffering from an acute disease, that an elaborate diagnostic exercise must precede the advice? These are not academic questions, certainly, not for developing countries that are struggling to find out how the meagre resources available to them for child health care programs could be optimally deployed with maximal benefit.

Can it be argued seriously that without weighing and without the aid of growth charts mothers cannot be motivated? There are undoubtedly situations in developing countries where workers without access to sophisticated weighing scales have achieved significant improvements in child health and nutrition among poor communities; but, unfortunately, these experiences have not been properly documented.

Indeed, there are several recent studies that have claimed significant reductions in child mortality in poor communities even with minimal intervention. Thus, in recent years there have been quite a few studies designed to test the effect of vitamin A administration on child mortality. In all these studies there were "control groups" that received no vitamin A, little intervention, and certainly no growth monitoring. Even in such "control" groups there was striking mortality reduction! Thus, in the study in Indonesia, although the erstwhile prevailing mortality was around 18, the mortality in the "control" group was just 7.4. This would only show that in extremely depressed communities, significant declines in mortality and improvements in health could be achieved even with minimal intervention in situations where frequent contacts between health workers and poor communities are established for the purpose of baseline studies (Hawthorne effect). Cravioto has pointed this out emphatically. Apparently, even the incidental, but actually "unavoidable," health advice that goes with such contacts in such "baseline exercises" is adequate to bring about significant mortality declines in extremely depressed communities. An added deliberate intervention in the form of a well-designed educational program carried out during such regular visits could have yielded even more gratifying results. This is the message that should go out to developing countries.

Nancy Gerein (1988) has concluded that

taking into account the low sensitivity and specificity of anthropometry to detect risk of dying, inaccuracies in weight measurements, low and non-representative coverage, and the high incidence of growth faltering in young children, the benefits of using growth monitoring as a screening mechanism appear to be few. The main potential appears to be as a catalyst for action on the part of the mothers, community and health service. However, the claims made for growth monitoring as an important element to increase the effectiveness of health care and education, increase utilization of services, and promote participation and empowerment in health care have not been supported by well-designed studies. The supposed potential of growth monitoring will not be realized unless attention is paid to preeminent issues of planning, training, resources, supervision, management, and evaluation in child health services.

Disenchantment with growth monitoring is not just occasioned by reports of poor implementation alone. The more basic cause is the lack of convincing evidence from any of the published reports of the *essentiality* of growth monitoring

in a public health service. That growth monitoring can, in trained hands, be a useful, "catalyst for action" is not denied, but is the "catalyst" a must in all situations?

Experience in National Projects

In TINP, which, although not a national project as such is all the same a large-scale project, growth monitoring was used for selection of children who would qualify for supplementation. This was a somewhat "perverse" use of the growth monitoring tool that had originally been introduced for *early* detection and correction of growth faltering and not for selecting subjects as a part of a policy of brinkmanship. This aspect had been discussed earlier and is, therefore, not elaborated here. It must be said also that inputs of the order that have gone into TINP are most unlikely to be easily replicated in a country-wide scale.

On the other hand, Integrated Child Development Services (ICDS) is a national program that reflects prevailing ground realities more faithfully. An assessment report of the ICDS program in India states that growth charts were "maintained only in 51% of anganwadis; although all anganwadi workers had been trained in growth monitoring, only 46% were found "good" with respect to weighing, 30% with respect to age assessment, 37% with respect to plotting weights, and 32% with respect to interpretation." Tara Gopaldas et al. (1990), on the basis of a careful examination of data covering 3,704 children under 6 years of age in India's ICDS program, found that "almost half the children had never been monitored" and that another 25% of cases were "monitored inadequately." Very few mothers (1%) could interpret growth charts. "Analysis of covariance of the effect of growth monitoring on weight for age and morbidity, controlling for socio-economic status and other program services, showed that growth monitoring did not have an impact on the nutritional health status of children!" Tara Gopaladas also quotes Abel, Director of RUHSA project in India as having concluded that "growth charting or monitoring did not have any additional benefit in improving the health of pre-schoolers covered in the RUHSA project."

What all these reports show is that health workers elaborately trained in growth monitoring and charting often find themselves unable to carry out this operation in a considerable proportion of children in the community. What is far more disturbing is that in a good proportion of cases where growth monitoring has been undertaken, the accuracy of the data was in doubt, implying that, instead of providing correct guidance and direction, they could have actually contributed to misleading workers and mothers. These ground realities cannot and should not be pushed under the carpet. Can a tool, no doubt good in a few hands, but poorly

used and, therefore, potentially misleading in a great many others, be safely injected into a large-scale, public health operation, especially if it is not found to be absolutely essential. This is an important point for consideration.

Conclusion

In the ultimate analysis, the only two major (preventive) "interventions" that can possibly be attempted by child health workers serving poor communities are:

- Advice and education regarding appropriate diets and health practices.
- Supplementary feeding in selected situations where resources are available.

For both these interventions data generated by growth monitoring can no doubt prove useful, but they are not essential. Interactions with the family and information regarding their prevailing dietary and living conditions and health practices, and even a close look at the children and their mothers, could provide leads for action and for deciding on appropriate priorities and identifying the items needing special emphasis. Discarding growth monitoring of individual children in the course of domiciliary visits will give the worker sufficient time to provide such advice in a relaxed manner, without unnecessary distraction.

Quite often, advice and education could be given to groups of mothers rather than to individual mothers in separate households. This approach will not only be less time consuming but will also be advantageous in that it will provide opportunities for mutual reinforcement among participants of the group; the less resourceful and knowledgeable in the group would receive support and encouragement from the relatively more successful and resourceful ones. In such an exercise, growth monitoring of individual children may not be necessary and indeed may not be feasible.

As for supplementary feeding, where resources are limited, it may be wise and prudent to target the supplements to *communities* of children identified by cross sectional anthropometric studies as being the most depressed and needing priority attention. This will be a far more sensible and feasible targeting approach than that of identifying *individual candidates* from within each community on the basis of evidence of extreme and persistent growth retardation, as in the TINP. The latter ("clinical and therapeutic" rather than "public health") approach is an exercise in "nutritional brinkmanship" and is promotion of "child survival" rather than of "child health."

It is gratifying that ICDS has chosen to follow the pragmatic policy of offering supplements to *all* needy children who happen to visit the anganwadi, as a means of promoting regular attendance of mothers instead of resorting to the rigid, unrealistic approach of TINP. After all, supplements at best supply no more than a third of the daily food requirement, and that for only part of the year. An expensive and elaborate selection process for this purpose would not be cost effective. There is no evidence that the overall expense of supplementary feeding *per community* of a hundred or a thousand under-fives in ICDS has been greater than in TINP; if the cost of the elaborate and tedious "selection process" in TINP is also taken into account, the ICDS strategy may turn out to be far less expensive.

During the last few years, vigorous efforts have been mounted to incorporate growth monitoring into the primary child health care systems of developing countries. Entire training programs and work schedules were being moulded and modified to facilitate such incorporation. Instead of identifying and adapting an appropriate technology suited to developing countries, the needs of a "chosen" technology (chosen by "experts" outside the developing countries) were allowed to dictate and distort the entire training and work patterns of health systems of developing countries — a case of "the tail wagging the dog!" The introduction of growth monitoring as an essential part of primary child health care operations in developing countries must have, no doubt, been well intentioned; but now that the limitations of this approach have become manifest, reconsideration and revision of this strategy are called for.

All this is not to deny that growth measurements have an important place in nutrition and health programs. There is undoubtedly a place for *cross sectional* growth measurements to assess the nutritional status of children in different locations and to evaluate the impact of intervention at different points in a given location. There is also a place for growth monitoring (longitudinal growth measurements) in clinics and special situations where facilities, expertise, and financial resources for meaningful growth monitoring exist. What is in doubt, however, is whether the *universal* injection of growth monitoring as an essential ingredient of all primary child health care operations is wise and realistic.

It must also be remembered that in the context of the painful "structural adjustments," which poor countries are now being compelled to undertake because of the dictates of international lending agencies, there are bound to be serious resource crunches that are likely to affect particularly the health and welfare sector. It is important under these circumstances that international agencies and their experts do not promote expensive items of health care that are at best arguable or unproven. Instead, they should help developing countries deploy their meagre resources for health and nutrition improvement in the most optimal ways.

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