

8. The use of RAP in the assessment of growth monitoring and promotion in north Sulawesi: Indonesia

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This paper describes the application of the RAP guidelines by RAP trained nutritionists to a growth monitoring programme in Indonesia. Different from many other RAP studies, there was only a single contact with each household. To be successful the programme required that both health personnel and mothers understand the significance of the growth curve on charts for each child and that mothers received correct and useful advice when their child's growth was faltering. The study combined direct observation at the weighing post and unstructured interviews with parents, weighing post volunteers, health center personnel, and village leaders. The method clearly identified weighing posts that were functioning well, those functioning less well, and those functioning poorly. It provided clear and practical recommendations for improvement. This study reinforces the contention that RAP should be carefully considered when rapid, relatively low cost methods are needed to help inform decision makers on how to improve a health intervention. However, the importance of solid training in RAP remains critical. - Eds.

GROWTH MONITORING HAS been conducted for more than 20 years in Indonesia. In a relatively short time, Indonesia has established an integrated system potentially capable of reaching nearly all of the population with essential primary health care. Monthly weighing of children under the age of five at Posyandu (integrated service post) has been used as an entry point for many interventions such as diarrhoeal control, vitamin A capsule and iron tablet distribution, family planning, and immunization, which represent the essentials of primary health care for children¹. Now, in all provinces, every village is close to a Posyandu².

It would be naive, however, to assume that the system is working well in all provinces in Indonesia. Much needs to be done to improve training of kadres (village volunteers), to insure accuracy in weighing and plotting weight curves onto growth cards, in interpretation of weight curves, and in nutrition counselling. The challenge now is to make growth monitoring more effective and efficient by alleviating the main constraints that hinder utilization of the existing services.

The objective of this assessment is to identify technical and operational changes that can improve the quality of growth monitoring, and to provide recommendations for improvement of the Posyandus' services.

Methods

The assessment was conducted by a team consisting of one nutritionist from the Nutrition Research Development Center in Bogor as coordinator, and four nutritionists from the province. The provincial nutritionists were trained for one week in Ciloto, West Java to collect data using RAP methods and to prepare the guidelines. In the district, 92% of children had growth cards, 62% attended the Posyandu, and an average of 42% of target children gained weight in each session. Three Posyandu areas were selected representing the best, the good, and the fair according to local criteria, including coverage, percentage of children who gained weight every month, and regularity of reporting. The best Posyandu was in Lemoh village, a good one in Sukur village, and one in Walian village that was only fair.

Weighing sessions at Posyandus are provided once a month. The team visited each Posyandu and observed all activities. Observations were made from the beginning to the end of a Posyandu session, which included registration, weighing, plotting of weight onto growth card, interpreting the results (weight gain, weight loss), nutrition counselling, and immunization. The team also noted the registration book containing the list of all under-five children in the area, the names of the children who visited the Posyandu each month, and the children who gained or did not gain weight. It observed the food supplements given at Posyandu to attract the children, and other activities, such as diarrhoea prevention, vitamin A, prophylaxis, distribution of oralit and iron tables, and antenatal services for pregnant mothers.

Focus group discussions (FGD) were conducted with a group of mothers who had children under three years, a group of kadres, and a group of key persons in each village. Each group consisted of six to 12 people. The participants in the FGD for mothers were chosen randomly from those who were visiting the Posyandu that day. The participants in the FGD for kadres were those who were active on that day, including the formally trained and untrained kadres (the ratio of trained and untrained kadres was 1:5). The participants for village key persons, FGD, included the head of sub-villages and hamlets, religious leaders, PKK women (family welfare movement), and members of the LKMD (village community welfare movement). The information gathered during the discussions included knowledge, beliefs, attitudes, and practices in monthly weighing, use of Posyandu services, breast feeding, and infant feeding, and the benefits provided by the Posyandu for people attending it. The focus group session lasted up to an hour and a half, following the technique described by Scrimshaw and Hurtado [1]. Each focus group meeting was guided by two nutritionists, one acting as facilitator and the other as recorder.

Home visits for interviews on socio-economic background, frequency of visits to Posyandu in the previous six months, and mothers' understanding of how to read the weight curve of her child on the growth card were carried out in 77 households in Lemoh village, 77 households in Sukur village, and 87 households in Walian village. At the village level, interviews were conducted with the Lurah (village leader) on all aspects related to Posyandu services.

Interviews were also conducted with the physician (head of Puskesmas = Community Health Centre), and his staff about the role of Puskesmas in Posyandu activities, the health and

nutritional status of the population, his perception of and attitudes toward the problems, and the management and effects of the Posyandu on people in the area.

An interview was also conducted at the district level with the head of the Health District Office. At the provincial level, interviews were carried out with the head of MCH Division, and the head of Nutrition Sub-Division at the Provincial Health Office. The topics of the interviews at the provincial and district levels were similar in principle to those at the Puskesmas level, adapted their broader scope and responsibility.

Each day's field observations were followed by a debriefing sessions in which each individual's findings were reported and discussed by those participating in the field work for that day. The major observations and conclusions were written by the team, and the final report of the study was written by the coordinator of the team.

The concept of monthly weighing

Although the concept of Posyandu is community ownership and management for the welfare of the community, the success of the Posyandu depends on involvement of the Puskesmas. In this study, it was observed that when the physician in charge of the Puskesmas motivated community participation (as seen in Lemoh village) the quality of the services was better. Although the influence of agricultural, religious, and social sectors has not been assessed, the role of Puskesmas still needs to be strengthened, since the quality of services at the Posyandus is not entirely satisfactory across the region.

The family planning field workers who have been trained in growth monitoring and promotion are also active in helping kadres, especially in motivating mothers to use contraceptives and providing them with materials for this programme. The use of contraceptives in these villages is over 80%.

The PKK leaders, particularly the wife of the Lurah (village leader) and the Lurah himself also strongly affect Posyandu performance. The PKK organizes a competition among the Posyandus in the villages every year. An evaluation team consisting of PKK, Puskesmas staff, Bangdes (village improvement under the Department of Agriculture) worker, the religious leader, and other key persons, evaluates Posyandu weighing sessions, methods of plotting the card, interpreting the card, counselling, and reporting. The winner receives equipment such as glasses, dishes, pans, etc. for preparing food supplements. The Puskesmas also derives benefits from the Posyandu. The immunization outreach became much easier, the number of children who attend the Puskesmas is significantly reduced, and the Puskesmas personnel do not have to weigh the children because they are already weighed at the Posyandu.

The superior performance of trained kadres compared with untrained kadres was clearly seen during the observation of Posyandu and discussion with kadres. They almost always gave nutrition counselling the most difficult task for kadres (Table 1). The untrained-kadres almost never assumed this role, and the transfer of knowledge from trained and untrained kadres was not

successful. To be competent in performing this task, the untrained kadres need to be trained in a formal way by Puskesmas personnel.

If the child has not gained weight, the kadre is supposed to ask whether the child is sick. If the child is sick, she recommends that the child be brought to Puskesmas; if the child is not sick, she advises giving more food, and foods that are more nutritious and diversified. There was great variation in the quality of this advice. Nutritious foods mean including more varieties of vegetables. If the child had gained weight, the kadre advised mothers to give the same foods in greater quantity to promote child growth.

Differences among villages

As shown in Table 1, there were marked differences among the three Posyandu consistent with the prior ratings of their performance. The participation of mothers in the weighing procedure in each of the villages is given in Table 2.

In Lemoh village, the close contact and cooperation among the three components and their activity (Puskesmas leader, village leader, and PKK leader) significantly improved the quality of services, and that village was evaluated as the best in North Sulawesi province in 1989. The Lurah in this village understood well the concept of growth and health, and he knew how to read and interpret the growth chart in terms of weight gain for its age. If the child was growing well, the Lurah recommended regular maintenance visits to the Posyandu. If the child was not adequately gaining weight, he advised bringing the child to the Puskesmas for medical help or having a consultation with the Puskesmas staff or kadre. It is not surprising, therefore, that the mothers in Lemoh village understood the concept of monthly weighing better than the mothers in the other two villages. Nobody in Lemoh village went to the Dukun (supernatural tradition healer) to ask for help to cure an illness.

"Focus group discussions" with key persons in Lemoh village (sub-village leaders, PKK, teachers, religious leaders, school principals, heads of hamlets), showed that they recognized the importance of the Posyandu for the benefit of the community. They claimed there, that the health status of the people had improved, the children were growing better, and the infant mortality had been sharply reduced - indeed they had not heard of even a single infant death in the past year. The factors accounting for this situation were the people's understanding in this village that good health is desirable, that mothers should bring their children to the Posyandu regularly, and effective improvements in environmental sanitation.

In Walian and Sukur villages, husbands did not pay much attention to the growth charts because they considered this to be more women's business. But, in Lemoh village, husbands were always keen to see the results of weighing. They understood the growth chart, and the implications of gaining weight or not gaining. They stated that the way to follow the development of their children was to watch the growth chart. They were happy if their children gained weight, and unhappy if they did not.

In all villages, the child had priority for food distribution in the family and parents gave more food to the child to enhance weight gain. The mothers in all the villages studied hoped that the kadres could demonstrate in a practical way how to make nutritious foods for infants, not only by explaining food models. Most mothers found it difficult to practice the kadre's advice in their homes.

Management of growth monitoring

In 1982, when growth monitoring was introduced, a general meeting was held in each village hall to identify persons who had the capability of becoming a kadre (village volunteer). The Lurah invited PKK members to discuss the issue of volunteerism, and asked whether they would be willing to be nominated as kadres. Only women should be selected, because they were most responsible for the welfare of children.

The selection criteria were:

- residence in the villages,
- preferably married,
- literate, and
- acceptance by the community.

Nearly 50% of the trained kadres were no longer active, because of moving outside the village, family problems such as pregnancy, child feeding, etc. New kadres were then selected to replace them, and also to fulfill the needs for more kadres in new Posyandus.

Three-day training sessions for approximately 30 participants were held in each village to provide knowledge and skill, and foster a belief in the usefulness of growth monitoring to secure commitment by the community. Most training consisted of "learning by doing," practice on weighing, plotting cards, interpretation of the care, recording the information, counselling, referring system, and other activities related to the Posyandu. Each participant was provided with a growth monitoring manual. The trainers were personnel from Puskesmas, the Department of Agriculture, Family Planning, PKK and the local government.

The competition to test knowledge and skills is organized by the PKK every year. By doing this, kadres are motivated to perform activities more efficiently. They prepare themselves by reading manuals more often and discussing their experience. Another way to improve the kadres' performance is to learn by doing, particularly for untrained kadres during the Posyandu session. The Puskesmas personnel continue to teach the kadres competency in weighing, interpreting the card, and in nutrition counselling.

Lemoh village was ranked the best in the North Sulawesi Province in 1989. This village had the best Posyandu in terms of services, the reporting system, and nutritional and health status of children. Key persons were responsible for motivating mothers and facilitating the location of Posyandu; the community was responsible for funding the food supplements; and the Puskesmas

was responsible for providing immunization, supervision, and for motivating community participation.

The kadres in Lemoh village received free services at Puskesmas. In the other Puskesmas, only a few of the kadres received such services. (The usual charge was Rp 500, or US\$ 0.35 per person per visit.) To sustain the motivation of kadres, this kind of reward needs to be provided for all kadres in all villages. Another reward might include field visits to another district, to observe activities similar to their own. Trips like this give kadres an opportunity to exchange experiences and return home with a greater pride in their work. Also, visits from government personnel and from other high-ranking organizations help to build confidence in both kadres and supervisors.

The PKK in Lemoh village had generated income by fund raising, e.g., selling foods to families in the villages, exhibitions, traditional music shows, etc. This gave them adequate funds to maintain their activities such as providing food supplements at the Posyandu, or to provide uniforms for kadres.

In Walian and Airmadidi villages, children aged 0-12 months regularly visited the Posyandu. After one year of age, they did not visit the Posyandu every month because they had completed their vaccinations. Mothers only brought their children to Posyandu for vaccination, not for growth monitoring. On the other hand, in Lemoh village, the mothers brought their children regularly up to the age of three years, even though vaccinations had been completed at the age of one year. They understood the benefits of weighing as well as vaccination. They believed that weighing was important for promoting better child growth and intellectual capacity; children became more active, appeared better, and were rarely sick.

In all three villages, attendance of children above three years of age was significantly less. According to the mothers, the scale was not suitable for them; the children did not like it and they ran away when their mother tried to bring them to the Posyandu. Although growth cards were amply available at the Posyandu, there were also private growth cards produced by food companies (Sun, Promina, Nestle) containing commercial infant food advertisements. These were found in Walian and Airmadidi villages. In Lemoh, all private growth cards were replaced by the original card produced by the Ministry of Health. The growth pattern of children using private growth cards was worse than that of other children. By the age of six months, most of their growth curves started going down, crossing the undernutrition line by the age of nine to 11 months.

Commercial infant foods are too expensive for most village families to buy in adequate amounts. Most infants who eat these refined foods refused to eat locally available foods, probably because the commercial foods were more palatable. Childhood experience strongly affects the development of food habits [2]. Therefore, children may develop a preference for refined foods which, in the long run, may cause problems with diversification in their food selection.

In all, Posyandus mothers are expected to pass in succession to each of five tables:

table 1: registration

table 2: weighing

table 3: recording weights and plotting cards
table 4: interpreting and counselling
table 5: immunization

These activities are scheduled at each Posyandu's session in 911 villages, every month. The announcement to remind mothers to bring their children to Posyandu is also made by the Lurah over a loudspeaker on each attendance day.

In general, weighing was done hastily without making sure of a stable point. There were almost always errors of several hundred grams. There was also not enough care taken in balancing the weight of the children; this resulted in an overestimate of children's weights by 200 to 600 grams. The most difficult tasks for kadres were interpreting growth lines and nutrition counselling. These tasks were almost always done by the most senior kadre (Table 1). In Walian, we observed that this task was taken over by Puskesmas personnel (health workers).

In all villages, growth cards were taken by the mothers and retained in their homes. In Walian, kadres frequently complained of lost cards, and several looked very dusty. The mothers had little incentive to pay attention to the cards except as a record of immunization. We observed during home visits that lost cards were used as a reason for not coming to the Posyandu. In Lemoh the cards were rarely lost.

During home visits we did observe growth cards of the children. In Lemoh, 74.0% mothers brought their children more than four times to Posyandu compared to 62.0% in Sukur (the good Posyandu), and 48.3% in Walian (the fair Posyandu).

In general, 95.2% of the children were brought to Posyandu by their mothers, and only 4.8% by others such as grandmothers or relatives. These opportunities should be used effectively by kadres to give nutrition and health counselling, because the mothers who were responsible for taking care of the children were the ones who attended the sessions.

Table 1 summarizes the characteristics of Posyandus in each village. Conditions surrounding weight sessions, registration (table 1), weighing (table 2), recording (table 3), counselling (table 4), and immunization (table 5), were different in each Posyandu. In Lemoh, the kadres performed the tasks better than kadres in Sukur; and kadres in Sukur performed the tasks better than those in Walian. In Walian, there was no kadre to record weights or plot curves in table 3. The kadre's position was taken over by a Puskesmas worker and he did all the plotting, recording and immunizations. According to the schema, immunization should be carried out in the last table (table 5), but in this Posyandu it was in table 3. There was no nutrition counselling given at Posyandu in Walian, but a speech was given at the beginning of the weighing session to remind mothers to come to Posyandu the next month, to motivate them to come regularly, and to recommend family planning.

In Lemoh and Sukur, nutrition counselling was given by kadres in table 4. For a child whose weight was increasing, the kadre advised the mother to continue feeding the child the same food in greater quantity to allow for growth. If a child had lost weight, the kadre determined whether the child was sick. If so, she recommended that the mother bring her child to the Puskesmas

(Community Health Centre). The mother was advised to give more foods and more diversified vegetables. For children under one year, the emphasis was on breast-feeding, and more nutritious infant foods such as "nasi tim," composed of soft steamed rice mixed with vegetables, beans, tofu, tempeh, chicken liver, or meat. The PKK (family welfare movement) plays an important role in more effective functioning of Posyandus, as observed in Lemoh village.

Table 1. Characteristics of Posyandus

ACTIVITIES	WALIAN (poorly functioning)	SUKUR (functioning less well)	LEMOH (functioning best)
1. Situation During Session	Very crowded	The space was adequate	Atmosphere was convenient
	Noisy	Less noisy	All kadres working and more efficient
	Some kadres busy	All kadres busy	
2. Registration (Table one)	One kadre	One kadre	Three kadres, all children registered first
	Registration	All children registered first	
	Some children weighed before registration		
3. Weighing (Table two)	One kadre	Three kadres; 2 weighing and 1 recording on paper	Three kadres; 2 weighing and one recording on paper Calibration at beginning of session
	No calibration	No calibration	
	Wearing shoes and hat still weighed	Wearing shoes and hat still weighed	
	Some mothers weighing their children	Reading accuracy 0. kg	
4. Recording (Table three)	No kadres	1 kadre plotting the cards and recording weights in book	2 kadres:
	1 Puskesmas personnel to do plotting and recording		1 plotting cards;
	Also giving immunization, Vitamin A capsules, and Iron tablets		1 recording the weights in a book
5. Counselling	3 kadres for food	2 kadres	3 kadres

(Table four)	supplements		
	No counselling except nutrition extension	coordinator kadre for Nutrition counselling using manual and food model	1 counselling
		Food supplements by another kader	1 distributing food supplements
			1 giving prophylaxis vitamin A by cap stiles, iron tablets, oralites and deworming tablets
6. Immunization (Table five)	Conducted by a health worker at Table 3	Immunization for children and mothers (TT)	Immunization for children and mothers (TT)
	Prophylaxis Vitamin A, iron tablets and oralite	Antenatal services by a midwife	Curative services Antenatal care services by a midwife
		Prophylaxis Vitamin A, iron tablets, oralites	

Table 2. Frequency of Visits in the Last Six Months

FREQUENCY OF MOTHERS' VISITS

Village (sub district)	N	0 visits	1-3 visits	4 visits
Walian (Tomohon)	87	11.5%	40.2%	48.3%
Sukur (Airmadidi)	71	7.0%	31.0%	62.0%
Lemoh (Tombariri)	77	6.5%	19.5%	74.0%
Total	235	8.5%	30.6%	60.9%

The PKK in Lemoh raised more money from their communities for food supplements, uniforms, etc., and they had better physical facilities provided by the hamlets. This is to some extent due to the more active participation of the village leader (Lurah) and more cooperation by the physician head of Puskesmas. Out of these studies emerged a set of practical evaluations and recommendations for improving the growth monitoring programme.

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Endnotes

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