

SEA-NUT-157
Distribution: General

Improvement of Nutritional Status of Adolescents

*Report of the Regional Meeting
Chandigarh, India 17-19 September 2002*

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1. INTRODUCTION

Adolescence is a critical period of growth and development. As adolescents go through the second growth spurt in this period, it is crucial that they receive the required nutrients. In the South East Asia Region, while a large number of adolescents suffer from chronic undernutrition, those belonging to the affluent segments of society may suffer from obesity. Both conditions however,

compromise adolescents' general health and performance. Chronic malnutrition, including anaemia, aggravates risks during pregnancy, especially amongst adolescents. Regional data shows high prevalence of anaemia in adolescent girls (upto 66%) and boys (upto 45%) in some areas. This high rate of anaemia not only contributes to increased morbidity and mortality associated with pregnancy and delivery, but also to increased risk of producing low birth weight babies. In this way, poor nutritional status is passed on from generation to generation.

Very little attention has been paid to adolescents so far, and adolescent nutrition has received inadequate attention in research as well as in programming for adolescent health. If adolescents are well nourished, they can make optimal use of their skills, energies and talents today, and be responsible parents of healthy babies tomorrow. To accomplish such a task, a special focus for overcoming malnutrition in adolescence is needed, in order to break the intergenerational cycle of malnutrition.

In 1997, the WHO South- East Asia Regional Office (SEARO) had organized a regional consultation in Delhi to review the available evidence relating to adolescent and maternal nutrition, and recommended measures for a holistic approach towards their improvement. Thereafter, a training workshop on developing applied food and nutrition projects for maternal and adolescent nutrition was held at Bangkok in 1999.

This regional meeting, held at Chandigarh, India, from 17-19 September 2002 has focused solely on the improvement of nutritional status of adolescents. As some countries are in the process of preparing their national adolescent health and development (ADH) policy and strategies, the meeting helped to focus attention on adolescent nutrition, and hopefully will strengthen the nutrition component of the proposed national ADH strategies.

The meeting was attended by 33 participants from nine countries of the South-East Asia Region-- Bangladesh, Bhutan, India, Indonesia, Maldives, Myanmar, Nepal, Sri Lanka and Thailand -- who included health and nutrition programme professionals at senior and middle management levels. They represented national research institutions and national departments of health and family welfare. The list of participants is at Annex-I, and programme schedule in Annex II.

2. OBJECTIVES

The objectives of the regional meeting were to :

- (1) To review and update the status of adolescent nutrition in the Member Countries of the SEA Region;
- (2) To share experiences of countries on micronutrient supplementation and other nutrition intervention programmes for adolescents;
- (3) To identify interventions for improving the nutritional status of adolescents, including building capacity of health workers in addressing these areas;
- (4) To explore mechanisms to deliver these interventions through health and other related sectors (such as education and sports); and
- (5) To identify research gaps and set research priorities for future studies

3. INAUGURATION

Dr Rukhsana Haider, Regional Adviser, Nutrition for Health and Development and Food Safety, WHO introduced and welcomed the guest of honour Ms Poonam Khetrpal Singh, Deputy Regional Director, and the local organizers of the Meeting (NIPCCD). While Dr Patanjali Dev Nayar, Consultant, Child and Adolescent Health, WHO/SEARO mentioned the objectives, Dr Haider briefly explained the agenda for the meeting. Ms Poonam Khetrpal Singh on behalf of the Regional Director, Dr Uton Muchtar Rafei, gave the inaugural address. She said that the subject chosen for the regional meeting was very important for the Member Countries of the SEA Region as 18 to 29% of their population consisted of adolescents. This section of the population faced a variety of nutritional challenges that affected their growth and development, which in turn adversely affected their quality of life and livelihood earning capabilities as adults. While the problem of undernutrition was crucial in the underdeveloped sections of the society, the problems due to obesity and its associated ill-effects later in life for the adolescents belonging to middle and upper classes was equally critical. She stressed that the purpose of the meeting was to critically examine what had been achieved so far and identify the tasks required to be carried out for improving adolescent nutrition. Mrs Singh reaffirmed that support from WHO in achieving a better and sustainable health and nutritional status of the people of this Region would continue as before, and wished the deliberations all success.

Dr Hla Kyi was nominated as the Chairperson, and Mr Gyambo Sithey as the Rapporteur of the Regional Meeting.

4. NUTRITION IN ADOLESCENCE: AN OVERVIEW OF THE SITUATION IN SOUTH EAST ASIA

Dr. Rukhsana Haider's presentation on the above topic covered the importance of nutrition during adolescence, and reviewed adolescents' nutritional status in the South-East Asia Region, research priorities and future challenges. A brief summary of her presentation is included here

4.1 Nutrition during Adolescence

Adolescence is a particularly unique period in life because it is a time of intense physical, psychosocial, and cognitive development. Growth is faster than at any other time in the individual's life except in the first year. Increased nutritional needs at this juncture relate to the fact that adolescents gain up to 50% of their adult weight, more than 20% of their adult height, and 50% of their adult skeletal mass during this period.

Caloric and protein requirements are maximal. Requirement of other nutrients e.g., iron, calcium and vitamins also increase. In summary, the main nutrition problems affecting adolescents include: undernutrition in terms of stunting, thinness, catch-up growth, and intrauterine growth retardation in pregnant adolescent girls; iron deficiency and anaemia; iodine, vitamin A; and calcium deficiencies; other specific nutrient deficiencies, e.g. zinc, folate, and obesity. Undernutrition reduces work capacity, endurance and ability to concentrate, and overnutrition predisposes to chronic diseases, e.g.: diabetes, cardiovascular disease.

4.2 Review of the Nutritional Status of Adolescents' in the South-East Asia Region

There is paucity of data on adolescent nutrition in the SEA Region. Reports from India, Bangladesh, Nepal and Myanmar show that 32%, 48%, 47% and 39% adolescents respectively are stunted, and 53%, 67%, 36%, and 32% adolescents from these countries are thin. The growth of adolescents from affluent families in India was, however, comparable to their American counterparts. Diets of adolescents were deficient in all the nutrients, especially

in energy, iron, vitamin A, and calcium. Anaemia is common among both boys and girls in the Region. The prevalence of anaemia ranged from 45-90% in India, 22-90% in Bangladesh; 28% in Indonesia, 42% in Nepal and 26% in Myanmar. Vitamin A intake is grossly deficient, but surprisingly has not been addressed in this group. More studies are required on calcium supplementation and bone mass density.

Teenage pregnancies are very common. The proportion of girls aged 15-19 years who have begun child bearing in some of the countries of the Region is, 60% in Bangladesh, followed by 50% in Nepal and 30% in Indonesia.

4.3 Interventions

Although there are no large-scale programmes, some of the interventions to improve the nutritional status of adolescents of this Region have used the following: social marketing approach; school-based nutrition education; improved school lunch; iron supplements bought by the girls; women's involvement; weekly supplementation of iron and folic acid to schoolgirls; iron and folic acid tablets to women through marriage registries (tablets bought); child-to-child and girl-to-girl approach; promotion of community garden to grow vegetables; promotion of usage of footwear, and involvement of the community

4.4 Research Priorities

These were identified as:

- (1) Qualitative studies on adolescents' diets and eating behaviours;
- (2) Effect of vitamin A supplementation and iodine on adolescent nutritional status;
- (3) Effect of multiple micronutrient supplementation or food supplementation on maternal nutrition and foetal outcomes in pregnant adolescents;
- (4) Interventions to identify and address obesity in adolescence
- (5) Cost-effectiveness of programmes addressing adolescent nutrition.

4.5 Major Constraints

These include socio-cultural factors; gender issues; absence of national ADH policy/strategy (except in Nepal); reluctance to accord priority to adolescent nutrition, and lack of communication and coordination at all levels.

Challenges

The challenges for all those working in this field could include-motivating families to improve the nutrition of adolescents (feed more, buy micronutrients supplements etc.); identifying and addressing the priority issues in each country; influencing the media for positive promotion; optimizing school health programmes; involving schools providing vocational training; reaching out of school adolescents; conducting operations research – and linking with large programmes so that they may subsequently be scaled up; making feasible plans for sustainability and getting political commitment for improving adolescent health and nutrition, in order to have healthy, happy, intelligent and productive adolescents and adults

5. COUNTRY PRESENTATIONS

5.1 Indonesia

Dr Sohail Ally reported that the adolescent population in Bangladesh is 29.5 million. Studies showed that the health and nutritional status of adolescents was poor, and females were more disadvantaged than males. Adolescent growth spurt is delayed, extended, and less intense in the Bangladeshi females than in their western counterparts. Girls consumed fewer calories than boys, which was 8% lower for age group 10-12 years; 18% lower for 13-15 years and 28% lower for 16-18 years.

Evidence also suggested that more than 50% girls were stunted and about one third were wasted in rural areas. About 43% of rural girls were anaemic; 3% suffered from iodine deficiency; and 2.1% boys and girls exhibited signs of vitamin A deficiency.

Reasons for poor nutritional status of adolescent girls were gender discrimination; poverty; lack of education; inappropriate feeding practices, superstitious beliefs, food taboos that prevented consumption of certain foods; and faulty intrafamilial distribution of food.

Adolescent reproductive health has been included as an important component of the essential services package (ESP), – a government programme.

5.2 Bhutan

Mr Gyambo Sithey explained that although the population of Bhutan was only 600, 000 and those under 15 comprised 40 percent of the total population, not much data was available on these adolescents. It was heartening to know, however, that the Bhutan government had initiated endeavours to improve adolescent nutrition.

In Bhutan, iodine deficiency was prevalent in the younger adolescents. Programmes for school children included universal supplementation of vitamin A and deworming; health education through comprehensive school health programme, and provision of free meals in schools. Recent research showed the prevalence of anaemia in 56% of adolescent girls and 58% boys.

Proposed initiatives for improving nutritional status of adolescents in Bhutan included conducting baseline anthropometric studies; surveys on iodine deficiency diseases (IDD), and anaemia. An effort would be made to strengthen the ongoing supplementation programme for adolescents through a national programme. There is a proposal to develop an adolescent policy and programme document for improving adolescent health in Bhutan.

5.3 India

Two presentations were made on the adolescent nutrition situation in India. Dr B Siva Kumar described the National Nutrition Monitoring Bureau (NNMB) survey conducted in 1975-79 and 1996-97 in 10 states of India. The surveys showed that the average mean heights and weights of girls had increased over the years. The mean Body Mass Index (BMI) for both boys and girls had accordingly improved, but were still much behind their western counterparts. A marginal increase in protein and energy intake was observed in some situations and improvement was better in case of girls than boys. The mean energy consumption by adolescents as 91.6% of the recommended dietary intake (RDI). Prevalence of anaemia was more than 70% among adolescents (12-17 years). There was a difference between height and weight increment of boys and girls belonging to the high and low income groups. Adolescent boys were prone to obesity and high blood pressure.

Studies showed prevalence of anaemia during pregnancy, led to obstetric problems and was a major risk factor for LBW. Another study on supplementation with a nutritional beverage showed a significant increase in weight and height, total bone mineral area and improvement in mental scores, in school children.

Dr Shubhda Kanani presented evidence from studies on adolescents conducted during the last decade in India. The highlights were:

- (1) Over 80% of adolescent growth (attained weight and height) in both low and high income group girls was completed in early adolescence i.e., between 10-15 years of age.
- (2) The year preceding menarche marked the year of peak height velocity (PHV). It was observed that while the majority attained menarche at 13 years of age, age at PHV take off was 11.5 years.
- (3) Two-thirds of girls in most of the studies showed weight deficit and below normal BMI values (thinness) were observed in 38% girls. Stunting was observed in fewer girls.
- (4) Gender differences were inconsistent in the studies. Undernutrition and anaemia were equally common in adolescent boys as well as girls.
- (5) Anaemia prevalence was reported as 55-75% in most studies reviewed (hemoglobin cut offs of 11 g/dl or 12 g/dl were used).
- (6) Research evidence strongly indicates the need to address the pervasive problem of anaemia in both younger and older adolescents, though the focus of anaemia control initiatives is primarily on post-menarcheal adolescent girls who are closer to reproductive phase.
- (7) Impact of IFA supplements on growth of adolescents was observed. Once weekly tablet of IFA supplement under supervised conditions led to significant improvements in hemoglobin levels. Impact on cognition and physical work capacity was also seen in a few studies. Further investigations are required; as such benefits will enhance educational potentials and provide incentives to school systems to implement anaemia control programmes for adolescents.
- (8) Adolescents consumed highly inadequate diets – poor in quantity and quality. While all nutrients were deficient, in particular, the intakes of calories, iron and vitamin A were highly unsatisfactory meeting about 50 percent of RDA or less. When compared to other family members, both

adolescent boys and girls met relatively less of their nutrient requirement (calories, protein, iron, β carotenes), with the adolescent girls showing the greatest deficit in terms of percent RDA met for iron.

- (9) Adolescents lacked knowledge and skills related to their nutritional needs, health care and reproductive health. Attention to information, education and communication needs should be given utmost importance.

Success Story from India

An Adolescent Girls' Anaemia Control Programme in Baroda, India was shared by Dr Prakash V Kotecha,

The project aimed to

- (1) Institute school-based, supervised weekly IFA supplementation for all enrolled girls, with built-in compliance monitoring by the school system, reported to the local medical college for tabulation;
- (2) Provide nutrition education to girls and teachers, in order to induce changes in dietary behaviour;
- (3) Explore the possibility of an outreach to non-school adolescent girls.

The project was established in 405 schools, with a total female enrolment of roughly 65 000 girls aged 12-19 years. A baseline study found that 74.7% of girls were anaemic, and that 97% of the girls were willing to consume IFA tablets on a weekly basis.

Meetings were held with district authorities, school principals and teachers' associations to explain the project's rationale and strategies. These were followed by training on logistics, IEC and supportive supervision. Two teachers from each school were trained by medical officers from local health centres. The teachers' training was interactive and skills-based, and included logistics, the use of IEC materials, self-monitoring by the girls, use of the reporting format, and handling side effects.

The schools ensured the IFA supplementation and nutrition education sessions on a fixed-day weekly basis. The health system received and distributed the IFA tablets to the schools, and served as a referral service, if girls reported side effects. The education sessions drew on an array of

multimedia IEC materials that had been specially prepared for the project. Compliance with weekly supplementation was above 90%, based on regular reporting from nearly three-quarters of the schools; an incidence of 3% for side effects was reported.

The mid-term impact analysis showed that the prevalence of anaemia (Hb < 12.0 g/l) declined from 74.7% at baseline to 54.5% at mid-term assessment. The reduction was least pronounced in tribal areas, where the prevalence declined by 24%, in contrast to reductions of 28.8% and 27.1% in the urban and rural strata, respectively. There were reductions in all categories of anaemia. The mean hemoglobin (Hb) value increased from 11.08 g/l to 11.72 overall; Hb levels increased by 0.6, 0.74 and 0.56 g/l in the urban, rural and tribal strata, respectively. The mid-term average Hb value of 11.72 g/l is below the 12 g cutoff, and highlights that the majority of this population remained anaemic.

5.4 Indonesia

The country situation was jointly presented by Dr R W Sunarno, and Dr Rachmi Untoro.

The adolescent population constitutes 21.5 percent of the total population in Indonesia but the number of schoolgoing adolescents decreases with increasing age. The last national surveys showed that 21.5 percent women were married below the age of 17 years and 12.2 percent girls' between 15-19 years of age bear children.

Prevalence of underweight in adolescents was 16.8% to 30.2%; about half of the female adolescents were at risk of chronic energy deficiency (CED) and 20 percent had body mass index below 17. Anaemia was seen in 45.8% of boys and 57.1% of girls and their knowledge about anaemia was limited. Food consumption survey among adolescents found that energy intake was 1 104-1 238 kcal, which was far below the recommended allowance of 2 000 kcal.

The government of Indonesia has carried out intensive programmes dealing with four major nutritional problems through life-cycle approaches. Daily iron tablet and 150 milligrams of vitamin C given for 13 weeks supervised by school teachers significantly improved iron status of adolescent girls. The Directorate of Community Nutrition has published Manuals of Balanced Diet

for Adolescents, and Nutrition Education for Schoolchildren, which are meant to be implemented by community health centre personnel.

5.5 Maldives

Mr Mohamed Zaheen reported that adolescents constitute about 19 percent of the population of Maldives, but data on nutritional status of adolescents is not available. Problems in the adolescent age group are mostly lifestyle related conditions such as smoking, and reproductive health problems arising from early marriage. Adolescent health problems were previously addressed through nutrition, safe motherhood and reproductive health programmes. There is now a specific programme addressing adolescent and women's health issues and provide need-specific services. The National Nutrition Plan 2002-06 is another vehicle through which improvements in the nutritional status of adolescents could be achieved.

5.6 Myanmar

The Situation of Adolescent Nutrition in Myanmar was presented by Dr Hla Kyi, and Dr Phyu Phyu Aung. Adolescents in Myanmar accounts for 19 percent of the total population – 75 percent in rural, 25 percent in urban, with only 25 percent at school. The mean age of marriage was 26 years for males and 24 years for females. Teenage marriage was prevalent in rural and urban communities with low socioeconomic status with 53.8 percent women married before 20 years of age. Self imposed calorie restrictions were prevalent among adolescents.

Iron deficiency anaemia was a major nutrition problem seen in 26.4% of adolescents. The prevalence of underweight was 41.5% among boys and 22.2% among girls and prevalence of stunting 37.6% and 30.4% respectively. Survey on dietary intake of adolescents revealed that calorie and protein intakes were 85 percent and 110 per cent of the RDA. Another study revealed that total calories, carbohydrate, fat and protein intakes were adequate in males (>85% of RDA) and a little bit low in females, except for protein. Proteins consumed by them were of vegetable origin. However, calcium and iron intakes were low in both sexes. Intake of iron inhibitors further affected the availability of iron from food. Studies found no indication of hookworm infestation as a cause for anaemia.

Food behaviour studies of adolescents in Myanmar revealed that the practice of consumption of Western food was prevalent among almost 50 percent adolescents.

Some of the constraints to adolescent nutrition promotion include inadequate information on adolescent nutritional status; absence of appropriate reference standards; poor access to out-of-school adolescents; and inadequate resources – manpower and money. The presence of political commitment to adolescent nutrition; adequate health infrastructure, existence of intersectoral cooperation and involvement of NGOs in the programmes could be counted as strengths.

5.7 Nepal

Dr Sharada Pandey informed that adolescents comprised 23 percent of total population of whom 34 percent were illiterate; 71 percent employed while 23 percent of rural adolescents had begun child bearing as compared with 13 percent among urban adolescents, this proportion declined with increasing educational status. Of the babies born to women below 20 years, 17 percent had low birth weight. About 23 percent of adolescents (15-19 years) had low BMI, 66% were anaemic and 5 percent adolescent mothers had night blindness.

5.8 Thailand

Dr. Jintana Yhoun-Aree stated that adolescents comprised 20% of the total population of Thailand and their nutritional problems were overweight, obesity, IDD and iron deficiency anaemia. By 17 years of age, 25% girls and 17% boys were obese. 20% of 6-14 years old children were anaemic. The persistence of anaemia could be due to persistent hookworm infestation in some of the regions. Among the nutritional deficiency diseases, IDD received a high level of attention with salt iodization as the main strategy.

Ongoing studies on adolescent nutrition included the promotion of physical exercise in adolescents, efficacy trial on iron intake, weekly supplementation in high school children, and promotion of food behaviour.

6. MAINSTREAMING ADOLESCENT NUTRITION CONCERNS IN HEALTH SYSTEMS

Concern was expressed over the wide gap existing between promises and achievement of nutrition programmes; and nutrition not being a part of the mainstream system at the field level whereas policy statements identify state adolescents as a target group, there is lack of translation into practice; job training; and in monitoring and evaluation systems.

Similarly, even major health programmes should prioritize adolescent nutrition concerns in the programme objectives, as adolescent weight and height and anaemia status are crucial determinants of safe motherhood and birth outcomes.

The term 'mainstreaming' was explained as an organization's process to make routine an innovation that successfully addresses an opportunity or problem identified by the organization and its beneficiaries. An innovation is identified as pertinent, tested and modified to meet identified needs, then adapted and advocated by key individuals of the organization. This is followed by routinization and integration of the tested innovations into the system.

The key to success would be to give the innovation more time for their acceptability. The problems foreseen in advocacy included too many frequently changing agendas, and few professionals consistently advocating. Thus, there is a need to prioritize few solutions, stick to them and build in advocacy.

In conclusion, caution was expressed that teething problems may force one to abandon the programme too soon and hence it would be advisable to give it enough time for its acceptance. The monitoring and feedback systems needed strengthening to take up timely corrections. This framework could be applied for most adolescent concerns, in fact for most nutrition issues being neglected by the health system. The participants were encouraged to be persistent and focused in their efforts, for the adolescent has waited long enough for a better life.

7. PERCEPTIONS OF ADOLESCENTS ABOUT NUTRITION AND OTHER RELATED ISSUES

A very lively and spontaneous panel discussion was conducted by Dr Nayar with adolescents from schools (public and slum) on their perceptions about nutrition and other related issues. The participants also got a chance to

interact with the adolescents at the end of the session. The highlights of the discussions are provided below:

General problems faced by adolescents

- (1) Stress
- (2) Heavy burden of studies
- (3) Lack of education due to poverty
- (4) Irritability and frustration

Nutrition related: Missing meals intentionally; media driven consumption of junk food.

- (1) Adolescents equate nutrition with quantity of food. A couple of them mentioned "balanced diet".
- (2) There is a dearth of TV programmes or spots on health and nutrition, though there are articles in the print media including local language papers and magazines.
- (3) Adolescents have very little information on food supplementation and fortification.
- (4) Home food was monotonous, even though it might be nutritious. Junk food was preferred because it was yummy, fashionable due to peer pressure/media/western influence.
- (5) Consumption of milk and milk products was low among adolescents because any message which came with parental pressures did not get accepted.
- (6) Some adolescents picked up food habits from parents.
- (7) Myths about 'food' existed and it was more so because of parental attitude, even though they themselves personally did not believe in it.
- (8) More information about nutrition would be preferred through teacher, media and doctors.
- (9) Information through mass media should be simple with easily understandable terms, appealing, interesting, with cartoon characters.
- (10) Information through teachers would be more effective for children under 10, and through doctors for those older.
- (11) Health professionals should conduct workshops, door to door visits and prepare IEC material on what to consume and what not to consume.

- (12) Generally, adolescents had no time for physical activity, because of pressure of studies/household work. They recognized it as a factor leading to increased number of obese children and adolescents.

8. GROUP WORK

In the second phase of the Regional Meeting, the participants were divided into three groups. The first group was assigned the task of detailing out the capacity building of health and community workers. The second group was given the responsibility of discussing the research gaps and priorities. The third group discussed planning/ intervention programmes for improving nutritional status of adolescents. Brief guidelines were given to each group to help them start the discussions.

8.1 Group Work on Capacity Building for the Health/Community Workers

The group unanimously recommended the need to equip the service providers with adequate knowledge and skills to implement an adolescent nutrition programme effectively, considering that the current programmes addressed adolescent health inadequately or not at all.

The group suggested the following four types of training for capacity building:

- (1) Advocacy - for policy / decision-makers; and sensitization for local government functionaries;
- (2) Orientation - for agricultural extension workers, social workers, local NGOs, etc. as per country systems
- (3) Training - health workers, school teachers and non medical group
- (4) Nutrition counselling training for effective communication

Identification of Trainees

The group identified the following for training: medical doctors; non-medical staff e.g. home science colleges and institutions; science teachers/school health in-charges/ physical instructor.

Development of the Training Programme

The process to be followed for the development of the training included:

- (1) Assessing the knowledge, attitude and practices (KAP) of the health/community workers;
- (2) Review of existing job functions of staff of different sectors;
- (3) Review of existing training manuals; and
- (4) Development of adolescent nutrition training programmes with supportive IEC materials (audio and video, flip charts etc).

Content of the Training Programme

The following topics should be included:

- (1) Needs in adolescence
- (2) Gender and sociocultural issues;
- (3) Role of good nutrition;
- (4) Nutritional deficiencies;
- (5) Healthy lifestyle;
- (6) Emerging issues (AIDS, obesity, diet-related NCD etc);
- (7) Adolescent pregnancy and family support;
- (8) Adolescent counselling and communication skills, and
- (9) Country-specific national policies, strategies and programmes.

Identification of Trainers

The training institutions identified for imparting training include medical colleges, home science colleges, institutions, nutrition departments, etc. The training methodology would be through implementation of the training programme; by integrating into existing training curricula; through in-service training and refresher training. The tools used would include lectures, demonstrations, workshops, seminars, advocacy, field visits, and study tours.

Resources

Financial and technical resources for advocacy and logistics need to be mobilized. It was emphasized that adolescent nutrition is not to be perceived as a different or separate entity or to be implemented as a vertical

programme. It should be implemented as part and parcel of the existing ongoing health and nutrition programme.

8.2 Identification of Research Gaps and Priorities

Priority Nutrition Issues

The nutrition priorities identified by the group included

- (1) Undernutrition/Obesity;
- (2) Adolescent anaemia, IDD and vitamin A deficiencies;
- (3) Behaviour change: traditional diets, body image, fashion issues;
- (4) Inappropriate food habits;
- (5) Influence of stress (competition, parents/peers' drive, lack of parental care) on nutritional status;
- (6) Influence of physical activity on nutritional status;
- (7) Lack of access to scientific user-friendly information;
- (8) Mental health – social/cultural pressures, and
- (9) Gender discrimination.

Operations Research

The groups suggested that operations research be conducted to study the feasibility, impact, and costs incurred in the following priority areas:

- (1) Integrating adolescent nutrition in RCH;
- (2) Adolescent behaviour/behaviour modification strategies;
- (3) Qualitative studies on adolescents' diets and eating behaviours;
- (4) Operationalization of gender issues in adolescent health and nutrition;
- (5) Community mobilization/establishing family support for adolescent nutrition;
- (6) Epidemiological research on micro/macro nutrient deficiencies of adolescents- linked to interventions;
- (7) Review of existing programmes having component/potential for adolescent nutrition;
- (8) Interventions to identify and address obesity in adolescence;

- (9) Capacity building for adolescent research among Member Countries of the SEA Region;
- (10) Cost-effectiveness of programmes; and
- (11) Mainstreaming nutrition in RCH.

The following multicentric research study was recommended for the SEA Region:

- (1) Multicentric study to improve early adolescent growth (9-15 years) through area-specific interventions (e.g. iron folate supplementation, nutrition; education-communication, community mobilization)
- (2) Operations research to explore the effectiveness of change agents for improving dietary behaviours (may be linked to other programmes, using multipurpose change agents);
- (3) Research on emerging micronutrient deficiencies -folate, calcium, zinc (country –specific).

8.3 Intervention Programme Planning

Identification of Major Problems

Major problems requiring intervention programme planning are as follows:

- Anaemia; Chronic Energy Deficiency (CED); delay in growth spurt; inadequate growth; adolescent pregnancy; vitamin A deficiency; iodine deficiency disorders; obesity.

Goals

The general goal for intervention planning would be to ensure optimal nutritional status and timely attainment of full growth and development potential of adolescents, The action points should aim to:

- (1) Control IDA early and effectively;
- (2) Make extra efforts within the national policy framework to reduce pregnancy during adolescence;
- (3) Ensure minimum of 80 percent adolescents get RDA and minimum 80 percent of RDA for all (including pregnant) adolescents;
- (4) Completely eliminate VAD and IDD;
- (5) Identify major gaps and constraints;

- (6) Identify effective strategies for school-going and out-of-school adolescents, and
- (7) Identify area-specific programmes (rural, urban, urban slums and tribal).

Methods and Strategies

These would include:

- (1) Food-based strategies
- (2) Nutrition and health education for behaviour change
- (3) Fortification e.g. iodine, iron, vitamins, trace elements
- (4) Empowering the community to be self-sufficient e.g. poultry farm, vegetable garden, fish ponds etc
- (5) IFA supplementation
- (6) Provision of mid-day meal at school
- (7) Vitamin A supplementation
- (8) Enforcement of legislation – e.g. ban on sale of non-iodized salt, advocacy on delaying age of marriage and age at first pregnancy
- (9) Improving accessibility of services for the adolescents
- (10) Promoting school enrolment and reduce school dropouts
- (11) Service delivery through adolescent-friendly centres
- (12) Organizing mass media campaigns
- (13) Enhancing partnership
- (14) Social marketing of the programme
- (15) In-built monitoring and evaluation for the programme and programme corrections for monitoring
- (16) Programme specific-strategies – e.g. for anaemia, school –based, for CED, multiple approach
- (17) A mix of health centres, community-based and school-based approach to be used. Proper linkages between above agencies needs to be created. The following workers should be involved –ICDS functionaries; medical and para medical staff of various centres; school teachers (sports, school counselors)

- (18) Iron supplementation, diet supplementation and food habits to be targeted

Partners

The partners identified by the Group in facilitating implementation of the programme include:

- (1) Department of Health and Family Welfare
- (2) Department of Women and Child Development
- (3) Department of Education
- (4) Department of Agriculture, Animal Husbandry and Horticulture
- (5) Department of Information and Broadcasting (I&B)
- (6) Community/clients groups
- (7) International and UN Organizations.
- (8) NGOs

Limitations

The limitations that are expected during the implementation of the programme include

- (1) Poor response from school and community
- (2) Health and other staff reluctant to accept additional responsibility
- (3) Lack of resources and lack of motivation
- (4) Poor coordination among departments
- (5) Different perceptions and priorities of adolescents
- (6) Poor compliance by adolescents.

All the groups presented their summaries in a session chaired by Ms. Poonam Khetrapal Singh, Deputy Regional Director, WHO – SEARO. Dr Dinesh Paul summarized the main highlights from the presentations made at the meeting, including those from the Group Work. Ms Poonam Khetrapal Singh congratulated the participants for bringing out comprehensive recommendations and assured the group that they would be given utmost consideration by WHO - SEARO.

9. CONCLUSIONS AND RECOMMENDATIONS

The following are the main conclusions and recommendations of the meeting:

9.1 Conclusions

This second growth spurt during the period of adolescence makes it imperative that adolescents receive the required nutrients. Adolescence provides for an opportunity to break the intergenerational malnutrition cycle. However, nutrition-related data of adolescents in the Region is very scarce. Whereas reports from Bangladesh and India were available to some extent those from other countries were either scarce or not available. Some of the highlights were:

- (1) Dietary and nutrient intakes were far below the recommended values, particularly for energy, iron, calcium and vitamin A;
- (2) Surveys and studies from Bangladesh, India and Nepal showed a high proportion of adolescent's boys and girls to be thin and/or stunted;
- (3) Iron deficiency anaemia is a major problem in both girls and boys;
- (4) Qualitative studies on eating behaviours have not been carried out; and
- (5) There are no large scale interventions for improvement of adolescents nutrition in the South-East Asia Region.

9.2 Recommendations

- (1) In order to advocate for adolescents, the nutrition fraternity should be assertive in demanding a rightful place for adolescent nutrition in the broad framework of adolescent health and development.
- (2) For networking of adolescent nutrition, a comprehensive adolescent health and development strategy encompassing a nutrition component would require a multi-sectoral approach with strong collaboration, coordination, and partnership with all the stakeholders, including adolescents.
- (3) To meet the challenges in addressing adolescent nutrition, it is necessary to develop adolescent friendly health centres catering to the holistic needs of adolescents, mainstream adolescent nutrition in the health systems, reach the unreached—out of school adolescents with nutrition interventions.

- (4) Better coordination with government is required to accord priority to adolescent nutrition, seeking political commitment for adolescent nutrition.
- (5) It is important to change the existing sociocultural milieu which adversely affects the adolescent nutrition.
- (6) Gender discrimination should be addressed. Adolescent boys should be involve in gender sensitization efforts. Adolescent health and development policy/strategy should be developed in the Member Countries of SEA Region. NGOs' involvement is to be strengthened as partners in dealing with adolescents.
- (7) Service providers should be equipped with knowledge and skills to implement an adolescent nutrition programme efficiently. Appropriate training methodologies and tools need to be developed to train the service providers.
- (8) Nutrition-related data for adolescents is scarce in the Region. The research gaps and priorities that have been identified need to be redressed. Factors that impact adolescents eating behaviour should be researched so that appropriate interventions could be planned.
- (9) Intersectoral collaboration is recognized as one of the strategies to address problems of adolescent nutrition. Appropriate methodologies and tools should be prepared to further sensitize community health workers, education, social empowerment and other sectors to effectively incorporate and address the relevant issues.
- (10) Adolescent nutrition issues should be mainstreamed into other programmes that reach out to adolescents. Programmes addressing the reproductive health needs of the adolescents (e.g. RCH-II in India) and integrated school health programmes would be ideal to start with.
- (11) The health system should work closely with the media which should be seen as a partner. Capacity building of the media persons should be carried out.
- (12) Effective attempts should be made to incorporate interventions to address the adolescent nutrition problem in the national adolescent health strategies.

Annex 1

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Annex-II
PROGRAMME

Day and Date	Time	Session
Tuesday, 17 September 2002	0930-1000 hrs	Registration of participants
	1000-1030 hrs	Inaugural Session
		Welcome Dr Rukhsana Haider/Dr A K Gopal Inaugural address - Ms Poonam Khetrupal Singh Objectives of the Meeting Dr Patanjali Dev Nayar Introduction of participants Dr Dinesh Paul Announcements and Vote of Thanks
	1030-1100 hrs	Group photograph
	1100-1130 hrs	Adolescent Nutrition in South East Asia: A review of the current situation - Dr Rukhsana Haider
	1130-1230 hrs	Country presentations (Country reports, experiences, and training) Chairperson – Dr Hla Kyi Rapporteur – Dr Gyambo Sithey
	1330-1430 hrs	Panel discussions with adolescents and staff from adolescent friendly health centres Dr Patanjali Dev Nayar, Panelist
	1430-1500 hrs	Country presentations ... contd.. Bangladesh, Bhutan, Maldives, Myanmar
	1530-1700 hrs	Country presentations ... contd... Thailand, India
Wednesday, 18 September 2002	0930-1000 hrs	Iron supplementation of school girls in Gujarat, India Dr Prakash V Kotecha
	1000-1030 hrs	Mainstreaming adolescent health and nutrition concerns in the government and NGOs programmes Dr Subhada Kanani

Day and Date	Time	Session
	1100-1230 hrs	Discussion on above presentations
	1330-1700 hrs	Group work
		Group I – Capacity building of health/community worker Group II – Identifying research gaps and priority areas Group III – Intervention programme planning
Thursday, 19 September 2002	0930-1100 hrs	Group work presentations
	1130-1300 hrs	Finalization of Recommendations: Chairperson: Ms Poonam Khetrapal Singh
	1400-1500 hrs	Concluding session Presentation of brief report Dr Dinesh Paul Concluding remarks Dr Rukhsana Haider * Vote of thanks Shanta Gopalakrishnan

