

Nutrition and Child Development: Global Perspectives

by Jacqueline Hayden

Nutrition is a global concern. The rights of all individuals to appropriate and adequate nutrition are embedded in no less than six universal proclamations, including the 1990 World Declaration and Plan of Action on the Survival, Protection, and Development of Children.

Most of us know that nutrition is a critical component for healthy development. We are not surprised to hear about the relationship of nutrition to sound bodies, energy, strong bones and teeth, clear skin, reduced risk for infectious diseases, and other physical and biomedical outcomes. What we may be less aware of is that nutrition is also related to neurological, psychosocial, and mental health and that nutritional deprivations in the early years (and pre-natally) can have deleterious effects on all aspects of health and well being throughout the life cycle.

Nutritional requirements of human beings fall into two major categories: macronutrients and micronutrients. Macronutrients include the proteins, carbohydrates, and fats which are necessary for survival. Micronutrients consist of vitamins and minerals now known to be essential for healthy human development. Micronutrients cannot be synthesised nor stored by the body. They must be ingested on a continuous basis. The most important micronutrients include vitamin A, iodine, iron, and zinc.

MICRONUTRIENTS AND CONSEQUENCES OF DEFICIENCY

Access to micronutrients is essential to health and well being. Deficiencies, especially during key stages of growth and body change, can cause permanent damage to physiological, neurological, and psychological development. Expectant mothers with micronutrient malnutrition have a high risk of producing low birth weight babies who display lower than average intelligent quotients (IQ) and who may be growth stunted. Low birth weight babies are at risk of infectious disease and have a lower than average rate of survival to one year. Iron

deficiency in expectant mothers has been correlated to poor attention span, inadequate fine motor skills, and reduced memory retention rates in children. Some studies have correlated iron deficient mothers to irreparable impairment of intellectual development in offspring, learning disabilities in later school years, immune system dysfunction, and growth failure (Griffin & Abrams, 2001; Gordon, 1997). Children who are micronutrient malnourished are more prone to suffer severe incidences of diarrhea and to contract measles, malaria, hook worm, and other infectious diseases. Vitamin A deficiency is the primary cause of blindness in children around the globe (Walter, Peirano, Roncagliolo, 1997).

Micronutrient deficiencies in children are also associated with diminished motivation and curiosity. These symptoms reduce exploratory activities including time at play. Consequently, micronutrient malnutrition impairs mental and cognitive development by reducing important interactions with the child's environment, peers, and care providers. These children can grow into adults whose intellectual and physical abilities have been compromised. Adults who suffered micronutrient deficiency in infancy and early childhood have higher rates of



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chronic disease and disabilities. Bone disease, osteoporosis, and cancer in adulthood have been correlated to calcium and selenium deprivations in early life (Sanghvi, 1996).

A GLOBAL PROBLEM

Despite popular conception, it is not only developing nations whose populations suffer from malnutrition and related diseases. It has been estimated that over 2 billion people, mostly poor women, infants, and children are iron, iodine, and/or vitamin A deficient. In the USA, over 21% of low income children between the ages of one and two are iron deficient and over 41% of pregnant low income black mothers have anemia, which will result in increased health risks for their babies (Mason & Garcia, 1993).

This issue is political, economic, and systemic. Some people believe that globalisation has contributed to increased malnourishment because multinational companies are making centralised decisions about which crops are grown and when (called *cropping*). Companies may grow crops which are genetically modified (destroying local varieties) or which yield high returns for the most profitable markets so that their selling value outstrips their nutritional value.

There is reason to believe that some international aid programs whose goal is to combat starvation may have unwittingly contributed to a global crisis in micronutrient malnutrition. Cropping, for example, has been used to increase the availability of staples such as rice and wheat to previously undernourished populations. There are many cases where starvation rates have been reduced by this method. But there are cases as well where cropping has resulted in the elimination of traditional local crops and a reduction in variety within diets. In some areas, for example, consumption of high micronutrient products such as beans and lentils has been reduced or eradicated because these low yield crops have been replaced with more efficient high yield staples (Comai, 1993; Combs, Welch, Duxbury, 1997).

THE OTHER NUTRITIONAL CONCERN: CHILD OBESITY

The number one nutritional concern in developed nations is obesity. In the USA it has been estimated that 25% of young children are overweight and more than 300,000 US citizens die each year of illnesses related to obesity. Obe-

sity has been reported to be a growing issue in many developing (impoverished) nations as well (Wong, Hollier, Myres, Fraley, Smith, Klish, 2001). Obesity implies not that food intake is inadequate, but that it is inappropriate, unhealthy, and damaging.

Using *empty* foods to appease children, eating while watching television, ingesting sugary or fatty snacks, and not engaging in physical exercise are major causes of obesity in children and adults in both developed and developing nations.

Habits which support obesity are formed in childhood, and conversely can be most easily changed during that time of life — in both children and their parents. Some strategies are listed below.

STRATEGIES TO IMPROVE NUTRITION

Good nutrition depends upon having access to healthy foods — but it also depends upon knowledge, skills, and attitudes which affect this access.

In both developed and developing nations good nutrition can be traced along a continuum.

First, individuals need to be able to access nutritional foods. This is a political and economic issue involving cropping, supplements, and distribution strategies which call for policies on multinational and state levels. Nonetheless there are issues around child malnutrition which can be addressed by individuals in both developing and in developed areas.

The second step on the continuum towards healthy nutrition involves raising the knowledge base of those who feed children. Parents and caregivers need to be made aware of the nutritional value (or nonvalue) of the foods which are accessible to them. WHO reports that vitamin A deficiency is endemic in many parts of the world despite the fact that fruits and vegetables, which are rich in vitamin A, are accessible in these areas. Food habits can improve when awareness is raised about the importance of some vitamins and about how co-consumption of some foods enhances their nutritional value (eating iron rich vegetables along with foods rich in vitamin C, for example).

Third, there is a need for skill development. Individuals need to know how to maximise the nutritional value of available foodstuffs so that inappropriate selection, preparation, and cooking does not detract from nutritional value.

Fourth, perhaps most importantly, parents and children need to develop positive attitudes about food and about eating. Food consumption is often related to self-image. Eating disorders which are increasingly prevalent in adolescents have roots in the

BEGINNINGS WORKSHOP

attitudes and food habits of young children. Individuals need to want to eat well, need to know why eating well is important, and need to value nutrition for themselves and for those for whom they are preparing and sharing meals.

The marketing of non-nutritious snacks and products has been a powerful mechanism contributing to poor eating habits. Packaging and marketing are misleading. In a recent study it was found that the majority of Australian parents had no idea that packaged snack foods such as muesli bars, dip 'n eat crackers, some breakfast cereals, fruit rolls, and other popular products were not nutritious and presented only *empty calories* to their children.

In relation to obesity, increased physical activity and reduction of saturated fats are major strategies. Action for change needs to include information dissemination, the development of selection and food preparation skills, and transforming attitudes which value convenience/speed over the nutritional value of foodstuffs. Success in these programs is also linked to the participation of target groups in all activities including problem identification, development of program goals, and implementation strategies

WHAT CAN WE DO?

There are examples from all nations and all levels of successful programs to improve the nutritional intake of children.

One example comes from Australia. As part of a government sponsored Health Promoting Program, child care centres in the state of New South Wales are being encouraged to establish *teams* made up of parents, staff, and local professionals. These teams identify issues of concern to their community and determine strategies for addressing these. In pilot trials many of the child care health teams chose *nutrition* as their target program.

Project goals have included inviting professionals to give workshops to parents, modelling food habits, sharing success stories about food and eating habits amongst parents, and raising awareness of children and families about misleading marketing. Because the problems and programs were identified by the groups themselves, commitment to addressing the issues and rates of success in project completion were high. Some of the best results in terms of improved nutrition practices and attitudes have come through child-to-child information sharing programs, parent networking, and group discussion sessions.

A ten-point checklist which can serve as a starting point for child care centres and other services who have access to chil-

dren and families was developed by program directors. With some adaptation, this checklist can be used in developed and developing areas. The checklist measures the level of nutrition-support in services and provides a vehicle for developing a plan to improve the facilitation of good nutrition and good nutritional habits for children and families. The checklist can be found on www.ChildCareExchange.com.

CONCLUSION

Nutrition is a global concern. Still, when we hear the word malnutrition, many of us think of starving children in third world countries. Sadly, this remains a true image. However, plans of action have been targeted at this group and there are indications that endemic child starvation in many areas is being reduced drastically — although not rapidly enough. There is also evidence that solutions such as cropping are creating new problems. The cropping processes which provide grains and rice to prevent starvation, may have unwittingly reduced the availability of micronutrients to large segments of the global population. Children who are micronutrient deficient are at risk for increased illness, long term mental and physical disabilities, and chronic diseases.

Micronutrient malnutrition and obesity are caused by failure to ingest appropriate food items. This is not solved by simply increasing the availability. Knowledge about food values, skills to select and prepare foods, and the facilitation of attitudes which support healthy eating and living habits are the weapons for improving nutrition worldwide.

In developing nations approaches such as more appropriate cropping, along with revisions to economic strategies, trade agreements, and distribution schemes are working towards sustainable solutions to global malnutrition.

The situation in developed nations such as the United States is also critical. Despite easy access to supermarkets full of rich foodstuffs and vitamin-supplemented products, significant numbers of children and expectant mothers are suffering from micronutrient deficiencies and their long-term effects. Meanwhile, child and adult obesity is a serious concern in both developing and developed nations.

It will take concerted action and international, intersectoral, and political commitment to address nutritional issues at the global level. But those of us who have access to families and young children can also make a significant contribution to the facilitation of good nutritional habits and the reduction of nutrition related disease and morbidity.

Parents and children need to know about the issue of nutrition, how it can and does affect their well being in both the immediate and long term. They need to be given opportunities to develop skills around purchasing and preparation of appropriate food. They need support and assistance through modelling and discussion — not judgements when the spectre of poor nutrition is noted. Every child care program can do its bit. A simple 10-point checklist is the first step. (See www.ChildCareExchange.com for the checklist “Does our program promote good nutrition?”)

Kofi Annan was not only talking about developing countries nor was he only addressing politicians when he stated this:

The world knows what is needed to end malnutrition. With a strong foundation of co-operation between local communities, organisations, and governments, the future — and the lives of our children — can take the shape we want and they deserve, of healthy growth and development, greater productivity, social equity, and peace.

— Kofi Annan, secretary general of the United Nations
Forward to *State of the World's Children* (1998)

We all have responsibility to help shape the future — and the lives of our children.

For further information check out these resources:

www.ChildCareExchange.com
www.healthychildhood.org
www.nal.usda.gov/fnic/etext/000008.html
www.unicef.org/sowc02summary
www.who.int/nut/

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Using Beginnings Workshop to Train Teachers by Kay Albrecht

Seeing connections: Hayden closely connects child growth with child development — identifying it as a critical component of healthy development. How do you and your staff view nutrition? Is it a family issue, a school issue, or a community issue? After reading the article, lead a discussion with your staff about the importance of micronutrients and obesity.

Wanting, knowing, and valuing nutritional information: Consider this important idea by having teachers identify curriculum activities, strategies, and alternatives for helping children and their families want nutritional information, know about foods and their nutritional contributions to health and growth, and value nutritional habits for themselves and their children. Produce a curriculum guide for each age level as a result of your discussions.

Raising the knowledge base: Hayden recommends raising the knowledge base of those who care and educate children during the preschool years. Investigate your community resources to add nutritional training to your annual training calendar. Contact area resources like hospitals that have nutritional staff, the USDA Agricultural Extension Office, which has food and nutrition specialists on staff, or pediatricians who have written publications. Ask these professionals to speak to your staff and support them in gaining knowledge about the connection between food and nutrition and healthy growth and development during the early childhood years.

What can we do?: Child-to-child information sharing programs, parent networking, and group discussion sessions are Hayden's recommended strategies for impacting good nutrition and healthy development. Does your school provide these services and resources? Appoint three taskforces of parents, staff, and teachers to explore these three different approaches to impacting children's nutrition. Ask the taskforces to make recommendations for implementation.

Self-Test: Ask staff to complete the questionnaire to assess the level of your nutrition program. Then, ask a select group of parents, like your board or advisory group, to complete it as well. Consider the responses as a springboard to improving your nutrition program.