

Background of the Vitamin A deficiency

Vitamin A deficiency is a problem of public-health significance in Tanzania, affecting mainly children and women of child-bearing age. A national prevalence survey which was done by TFNC in 1998 revealed that 24 percent of children had serum retinol levels below 20 mg/dl, and 69 percent of lactating women had breast milk retinol levels below 30 mg/dl. Such figures suggest that the proportion of children and lactating women with low retinol levels are far higher than the WHO cut-off levels for public health significance.

Magnitude and causes of vitamin A deficiency

Vitamin A deficiency is a nutritional disorder that mainly afflicts people in developing countries. The most obvious results of vitamin A deficiency are progressive damage to the eye, eventually leading to blindness. It is estimated that more than 250,000 preschool children go blind each year. Sub clinical vitamin A deficiency is a much more widespread problem, contributing to an increased risk of morbidity and mortality from common childhood infections. The prevalence of sub clinical vitamin A deficiency in infants fed breast milk suggests that lactating women in developing countries may also have insufficient stores of vitamin A.

In Tanzania vitamin A deficiency is one of the major nutritional problems of public health significance. The problem affects mostly children between six months and six years and pregnant and lactating women. A national representative survey conducted in Tanzania in 1997 revealed that 24% of children under six years and 69% of lactating women were vitamin A deficiency. Young children are at high risk of developing vitamin A deficiency due to their increased need during growth and their vulnerability to infections. Women of childbearing age are also at risk because of their increased need for the vitamin, both during pregnancy and, much more, during lactation. Vitamin A deficiency comes from two primary factors: inadequate intake of preformed vitamin A and vitamin A precursors (provitamin A, carotenoids) and diseases.

Interventions

The following interventions have been implemented by the centre to alleviate vitamin A deficiency:

1. Vitamin A Supplementation

The first national program for prevention and control of vitamin A deficiency started in 1985. The program focused on two main interventions: supplementation as a short-term measure, and promotion of production and consumption of vitamin A-rich foods as a long-term strategy. Control of infectious diseases and nutrition education were also adopted as supportive measures.

In 1987, vitamin A capsules were incorporated into kits for the Essential Drugs Program. However, vitamin A supplementation through this channel was both disease-targeted and confined to government-owned primary-health facilities – dispensaries and health centers – for children with active xerophthalmia, measles, persistent diarrhea, lower respiratory tract infections, and moderate and severe protein-energy malnutrition.

The disease-targeted vitamin A delivery system was characterized by low coverage among eligible children. An evaluation conducted in 1990-1991 concluded that only 61 percent of children suffering from those diseases who attended primary health facilities received vitamin A. Nationwide training was provided to health-service workers in 1991 and 1992 on diagnosis and management of vitamin A deficiency. However, vitamin A supplementation coverage as part of the Essential Drugs Program for the prevention and treatment of diseases that precipitate vitamin A deficiency among children was less than 67 percent. Health workers' management capability was also low. For instance, while vitamin A capsules expired or piled up in certain health-care facilities, they were lacking in many others.

Due to persistent low coverage, vitamin A supplementation was integrated into routine services of the Expanded Program of Immunization (EPI) since 1997. The EPI approach is one of the strategies that have been implemented under the national Vitamin A supplementation under routine EPI focuses on children under two years of age – at 9, 15 and 21 months – and postpartum women within four weeks of delivery.

Vitamin A supplementation coverage under routine EPI has been increasing during measles immunization for nine month-old children (from 55 percent in 1999 to 82

percent in 2002), but has been very low for children 15 and 21 months of age. Most important, the distribution system excludes eligible children between two and five years of age. Coverage for postpartum women increased at a slow pace – from 45 percent in 1999 to 62 percent in 2002.

Efforts to improve coverage led to the integration of vitamin A supplementation into sub-national measles immunization days in 30 of 113 districts of mainland Tanzania in 1999 and 99 percent in 2000. The success in vitamin A supplementation during sub-national measles immunization days, as reflected in such high coverage, formed the basis for the integration of vitamin A supplementation into the commemoration of the Day of African Child in June and World AIDS Day in December. Integration of vitamin A supplementation into the two events has been in effect since June 2001.

National immunization days are not currently used as a vitamin A supplementation channel because they will no longer be needed as soon as the goals of eliminating polio and measles are achieved, and because sub-national immunization did not cover all districts and therefore did not reach all eligible children. Tanzania currently provides vitamin A capsules through EPI for children up to two years old and postpartum women, and twice yearly supplementation events for children 6 to 59 months of age.

The decision to use the Day of African Child and World AIDS Day for vitamin A supplementation was made during a series of partnership meetings, which took place in 2000-2001. The rationale for selecting the two days was twofold. First, the two days are separated by an interval of six months, thus complying with the global recommendations on the time interval of vitamin A supplementation. Second, it was believed that capitalizing on two popular public commemoration days would enable program implementers to minimize operational costs.

In June 2004, de-worming was integrated into vitamin A supplementation in seven districts for children one to five years of age. Integration of de-worming into vitamin A supplementation was extended to all districts of mainland Tanzania in the December 2004 round, and is expected to continue in future years.

As shown in table 1.1, twice-yearly vitamin A supplementation coverage in Tanzania has been over 90 percent on average since 2001. Coverage below 80 percent was recorded in only seven districts in June 2004 and below 70 percent in only three districts. Nevertheless, pockets of low performing areas remain, even in well performing districts – suggesting that the program will be faced with two significant challenges in coming years: maintaining high coverage and devising a more tailored strategy for hard to reach children.

Table 1.1: Vitamin A Supplementation Coverage during the Day of African Child (DAC) and the World AIDS Day (WAD) – 2001-2004

| Period | Number of children Targeted (million) | <i>Children coverage</i> | |
|---------------|--|--------------------------|----------------|
| | | Number (million) | Percent |
| DAC 2001 | 5.84 | 4.65 | 79.5 |
| WAD 2001 | 5.92 | 5.38 | 90.8 |
| DAC 2002 | 6.13 | 5.48 | 89.4 |
| WAD 2002 | 6.21 | 5.83 | 94.0 |
| DAC 2003 | 6.21 | 5.79 | 93.2 |
| WAD 2003 | 6.29 | 5.73 | 91.0 |

| | | | |
|----------------|-------------|-------------|-------------|
| DAC 2004 | 6.13 | 5.67 | 92.5 |
| WAD 2004 | 6.13 | 5.77 | 94.2 |
| Average | 6.10 | 5.54 | 90.6 |

Source: TFNC

2. Preservation and consumption of Vitamin A rich foods

This is done by:

- Conducting training to extension workers at district level, the extension workers then disseminate the knowledge to the community
- Demonstration on preservation of vitamin A rich foods which include construction and use of solar driers.

3. Identification and advocacy in use of vitamin A rich foods

Example Red palm oil, orange fleshed sweet potatoes, etc.

4. Fortification

Efforts are being done to fortify food with vitamin A. Some foods such as sugar have already been identified as potential vehicle for fortification of vitamin A.

Way forward

- To stress on implementing long term measures to control vitamin A deficiency particularly dietary diversification and food fortification.

Conduct National survey on impact assessment of Vitamin A supplementation.