

Prevention of night-blindness in rural Bangladesh

SIR—Chronic dietary deficiency of vitamin A and its overt symptoms, including blindness, have been known for over two decades in Bangladesh. A recent survey found deficiencies almost four times larger than that indicated by the World Health Organization as constituting a major public health problem (1); the prevalences of night-blindness and Bitot's spots in rural Bangladeshi children were 3.6% and 0.9% respectively. Of the country's 23 million children in the age range of 6 months to 6 years, approximately one million can be assumed to have clinical signs of vitamin A deficiency. Over 60 000 children under 6 years of age suffer some degree of permanent loss of sight due to a lack of vitamin A. Almost 100 children are going blind each day, more than half of them dying within a few weeks (1).

Bangladesh has abundant supplies of foodstuffs rich in carotene, the precursor of vitamin A, such as dark green leafy vegetables and yellow fruits, but too few of these are consumed, particularly by children. In 1973 the government started distributing capsules containing 200 000 IU vitamin A to children every six months. The average coverage was 46% but the children of poor, landless and relatively inaccessible families were not reached and the deficiency rate remains alarmingly high (2).

In another recent study, in-depth interviews and focus-group discussions were conducted with 140 people representing a cross-section of age, sex,

religion, education and economic background in eight villages of central and northwestern Bangladesh, with a view to exploring perceptions about night-blindness (3). The condition was clearly recognized by the people, who correctly described its symptoms. Diarrhoea was mentioned by many as a cause of night-blindness, while some others related it to vitamin A deficiency, although vitamin A was specifically mentioned by only a few. The people knew vitamins as medicines and considered them to be a source of strength. Many maintained that night-blindness occurred mostly in children and pregnant women, whereas many others thought that males and poor people were particularly susceptible to it.

Village practices for the treatment of night-blindness conformed to the modern approach. They included the feeding of animal liver, *shak* (a dark green leafy vegetable), and the small fish *mola* and *dhela*, which contain very high amounts of vitamin A (4). People thought that there was a medicine for the treatment of night-blindness, and, interestingly, their description of it was suggestive of vitamin A capsules. When asked about the sources of this medicine, the government or, in a few cases, the Bangladesh Rural Advancement Committee, a non-governmental organization, were mentioned.

The question remains as to why so many children continue to suffer from vitamin A deficiency. Although *shak* and fish rich in vitamin A were mentioned as being good for night-blindness, they are not given to young children, or are given only in minute doses (5), since these foodstuffs are considered difficult for children to digest. They are also portrayed as reflecting poverty and consequently tend to be unpopular. Furthermore, cooking methods destroy a large amount of carotene.

In 1985, UNICEF supplied 81 million vitamin A capsules to Bangladesh and Indonesia, but their distribution was badly managed in some areas. Government health workers did not know at what age the capsules should be given, and in a discussion meeting maintained that they could be supplied to any person and in any number. In a focus-group discussion with adult males, one man reported that he took 17 capsules in two days,