

Letter to the Editor**The Bhutanese Way of Eating: Food for Thought for a Country in Nutrition Transition**

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Kingdom of Bhutan***Dear Editor:**

The Kingdom of Bhutan is a beautiful landlocked country among the Himalayas in South Asia, sandwiched between India and China. With a population of slightly more than 700,000, Bhutan is an agrarian society where majority of the population depends on subsistence farming and animal husbandry. Because of being landlocked and difficult geographical terrain, Bhutan has been able to maintain her unique culture including the food habits for centuries. Back in the days the Bhutanese people worked hard and lived off their fields eating whatever was grown, depending mostly on grains as staples, dairy products mostly butter and cheese and meat. Bhutan may be small agrarian based economy but its is also one of the fastest growing economy and hence with globalization, the old ways are quickly diminishing or being replaced by modern amenities making people more sedentary, less active but continued with the old method of eating habit that has given ways to modern lifestyle associated diseases such as type II diabetes, hypertension and hyperlipidemia along with malnutrition and micronutrient deficiency. The national nutrition survey 2015 (1), reported that the Bhutanese diet consisted of starchy staples mostly rice, maize and potatoes, eaten with dairy products such as butter/oil and cheese. Meat products, vegetables and fruit consumption was reportedly very low at around 1 to 1.5 times per week. This finding was consistent with the result from the nutritive analysis of the one-day school meal, where the meals provided in schools was mainly rice with potatoes, use of fats and salts were twice the recommended daily allowance (2).

The national dish equivalent for the Bhutanese is red rice with spicy chili cooked with cheese and butter gravy. Chili is considered more as a vegetable rather as condiments whereas cottage cheese is used as a condiment cooked with chili and various other vegetables. Whatever little vegetables Bhutanese eat is mostly laced with cheese which is rich in calcium and phosphorous and when cooked with vegetables the oxalate and phytate from the vegetables could form a complex with the calcium from the cheese, decreasing the absorption of nutrients both from the vegetables and cheese. Perhaps this could be one of the factors that might have lead to the high rates of anemia in the country especially among children. Iron deficiency anemia is one of the major micro-nutrition deficiencies amongst women and children with 43.8% of children below five year being mostly affected, followed by women of reproductive age (34.9%), adolescence girls (31.3%) and pregnant women (27.3%). In the same survey, complimentary food for breastfed children was found low in diversity with

only 11.7% receiving the minimum acceptable diet, and only 15.3% receiving four food groups (carbohydrate, fruits, vegetables and animal source foods). Coupled with the faculty diet, low consumption of nutrient rich vegetables and fruits, and minimum use of meat and meat products in the diet were recognized as some of the factors that could have contributed to the micro nutrient deficiency. Bhutan being largely a Buddhist country slaughtering and raising of animal for meat is uncommon, and majorly depend on imports. This could be one reason where meat is not very common in a Bhutanese diet.

The need for revision of the typical Bhutanese diet has been under discussion over a long period of time. The Royal Government has recognized lack of dietary diversity and iron deficiency anemia as a public health problem especially among children under five years of age. Thus the government has started various programs to imminently improve the nutritional status of children and in the long term to inculcate dietary diversification among general population. One such vital program is home fortification of complementary food with micronutrient powder along with promotion of complementary food diversification for children (3). This program is targeted to children between 6 – 23 months where mother / caregivers will be taught how to fortify the infant's food with the micro nutrient powder containing 15 micronutrients (vitamin A, B groups, C, E and three minerals namely copper, iodine, iron, selenium and zinc). In addition they are also taught how to prepare complementary food using locally available grains / cereals, vegetables and meat and meat products. Thus while the micronutrient deficiency will be corrected by point fortification, mother will learn about the value of diet diversification for children and the whole family. The other program is rice fortification with micronutrients (vitamin A, B groups and minerals iron and zinc) for children who are studying at schools with feeding program (4). In addition the school has revised their curriculum making agriculture and animal husbandry as integral part of learning, teaching children the value of food while learning about the biology of plants and animals. The Prime minister of Bhutan Dr Lotay Tshering has personally taken his own initiative to promote healthy lifestyle and diet by recently launching a social media campaign through his Facebook page called "Healthy འབྲུག་ལུ་ལོ་ - A PMO, Bhutan initiative" encouraging people to eat healthy, diversify diet including fruits and vegetables, and promoting physical activity to reduce lifestyle associated non communicable disease.

Since the nutrition survey in 2015, many advocacies have happened related to the need in

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diversification of diet, replacement of rice staple with other available cereals such as buckwheat, wheat, maize and millets. With the increasing literacy rate (71.4%) among the general population and constant media awareness, people have become more health conscious and are mindful on what they eat. During the time of COVID-19 people have realized that self-sufficiency is an integral part of food and nutrient security and micronutrient rich foods such as fruits and vegetables, and animal source proteins are essential for immunity to fight against infection. Bhutan and her people have to be mindful about exploitation brought about by industrialization, and its greatest impact will be on the health of the people brought about by change in lifestyle and food and the impact will not always be positive. We might be conquering hunger but the double /triple burden of nutrition cannot be avoided. Highly industrialized nations have equally larger and more expensive health problems

related to faulty and imbalance diet and it should be the lesson for the Bhutanese people to eat healthy balanced with adequate physical activity.

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