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India, Factor 11: Malnutrition

India: Malnutrition and iron deficiency in women & children

Topographically, India is a country consisting of mountain ranges, running rivers and the world's highest percentage of arable land. While the threat of diseases, such as malaria, has slowly become less of an epidemic in India, the overpopulation of the urban areas of the country is causing another health issue associated with food limitations and malnutrition. Due to the rapidly increasing population, food has become harder to come by resulting in groups of people that are not able to get the recommended daily allotment of essential vitamins and minerals. One of the more significant mineral deficiencies affecting women and children in India is iron deficiency. Due to lack of education and access, the population is not eating iron rich food and there has been an increase of children birthed with iron deficiency or anemia. Iron deficiency is irreversible when it affects a child's mental and physical state but it is a preventable matter. Primarily, lack of access to nutritionally varied diets is the main cause of malnutrition in both mothers and children. The lack of nutrition results in hemoglobin level drops to abnormally low levels which is also caused by iron deficiency. Lack of adequate nutrition significantly decreases the child's ability to learn which affects how they perform in school. Lack of adequate nutrition also affects the ability to physically perform which means individuals are unable to perform outdoor physical activities.

While most women and children in India's urban areas are malnourished, this does not mean India is a starving country. R.A Measham states in his book Wasting Away: The Crisis of Malnutrition in India, "Malnutrition in India is presently a silent emergency demanding greater priority than ever before." There is no current information detailing regarding whether malnutrition in India has been improving or worsening over the years. However, the majority of Indian women are not receiving nutrition education or even general health information which would reduce the chances of becoming malnourished at all. It has been documented that 33% of married women are too thin according to the body mass index, with 56.2% of women suffer from anemia with lower than normal levels of blood hemoglobin. Women especially need about 27 milligrams of iron per day or more in order to have enough iron in their own bodies to help maintain a healthy immune system, collagen, and myoglobin.

A malnourished woman often times has pregnancy complications, decreased birth rates, premature births, and even infant mortality. Proper and adequate nutrition during pregnancy supports the growing baby and placenta. However, when a woman's diet lacks quality and/or quantity of food, it can be expected that their offspring too will have health related issues directly linked to pre- and postnatal malnourishment. About 42.5% of children were born underweight moderately and severely between the years 2008-2012. When a child is born it is generally good for a baby to be breastfed for months after birth. However, mothers in India breastfeed exclusively up to 8 months and sometimes 12 months which greatly affects infant malnutrition. If a woman is malnourished but yet is attempting to breastfeed her child, the baby then is not getting all of the proper nutrition needed for healthy growth. Infants born malnourished or receiving milk from a malnourished mother typically suffer from physical and mental stunting.

Childhood stunt growth is a condition that is defined by reduced physiological and psychological growth during development which is mainly caused by malnutrition in a child. India has one of the highest numbers of stunted children below the age of 5 in the world. "Under-nutrition steals a child's strength and makes illnesses that the boy might otherwise fight off far more dangerous". Stunted growth also comes with a greater risk for illness and premature death along with delayed mental development which reduces productivity in school performance. Stunted growth can even be passed on to the next generation which is called the intergenerational cycle of malnutrition. Stunted children in India may never gain the height lost

in stunting nor will gain the corresponding body weight. According to UNICEF about 48% of children in India are stunted. “And the key point is that it is absolutely irreversible. You can feed up an underweight child, but with a stunted child, because of the effects on the brain, it has a permanently reduced cognitive capacity by the age of around two years old”. If malnutrition in children keeps progressing, then stunted growth will continue affecting the children of this country.

Another disease that affects children in India due to malnourishment is wasting. Wasting is disease that causes the muscles and fat tissue to “waste” away. It is sometimes referred to as acute malnutrition whereas though stunting is regarded as chronic malnutrition. Most of the world's wasted children live in Asia. Wasting is a reversible disease unlike stunting, focusing more on the loss of muscle mass. Wasting only affects the body physically instead of mentally also unlike stunting.

The most effective method to reduce malnutrition in India is to better educate and inform women in India’s urban environments about the benefits of proper nutrition for their own personal health as well as the benefits during pregnancy, during nursing, and for the long term health of their child as they go through the different stages of their growth and development. The major reason for women/child malnutrition is that women lack proper education. In particular, to combat iron deficiency women, should be encouraged to use and be better informed of the benefits of incorporating dark leafy greens and other foods high in iron into their diets. Since most people in India have to travel more than 5 km to reach the nearest health center and iron supplements won’t be available to mothers who are pregnant, dark leafy greens are as suitable as iron supplements. There is a lot of meat and fish but most people from India are vegan due to religion and other cultural reasons. Encouraging vegan women to eat dark leafy greens that are high in iron along with giving them the knowledge of the effects of having low iron when nursing and pregnant could reduce the risk of malnourished children and stunted children born. This could also improve birth rates and decrease iron deficiency among women and children. Decreasing the malnutrition in India could also set India as a role model for eradicating malnourishment all around the world.

In India, individual/personal annual income is the lowest compared to the BRICS nations. The BRICS nations refer to the countries Brazil, Russia, India and China who all are deemed to be at a similar stage in economics. In this country about 35.8% of a person’s annual income is spent on food alone but not spent on the proper foods for children and women to help combat malnutrition issues. An individual’s annual income is less than \$616 as the annual median is 618.00. The average family household size is about 4-6 members in a household with a woman having about 2-3 children based off the 2013 census. Having a household that big, and a yearly income that small challenges families to think about nutritional foods or foods that help with the recommended daily intake a person needs. Along with recommended daily intake, rural areas have a higher average calorie intake than urban areas. Protein nutrient is consumed less in urban areas than rural areas but more fat is consumed in the urban areas. People who live in the urban areas find it harder to find food than people in rural areas. In India the typical family size is 5 members in a household consisting of a working father, mother and 2 to 3 children. Since most Indians are either vegetarian or vegan, there is an excess consumption of calories, saturated fats, trans fats and a very low intake of fiber due to their food substitutions due to the lack of animal based products. Since Indians are vegetarians they are more likely to use more saturated fats and trans fats which aren’t the healthiest options.

India produces enough food and has arable land at its disposal to not only feed its population, but also to export. Education is needed on what foods are best to consume in order to meet the daily dietary requirements. It has been noted that India has extremely fertile soil in places like Punjab. Having arable soil means that planting crops and harvesting is something that natives are able to do in India. This could mean Indian farmers would be able to plant dark leafy greens and sell them so that not only are women getting iron but farmers are also making money.

In India there is gender inequality meaning that the women aren't treated equally as men. Thus, they are the ones that eat last during meals, they are usually married off at a young age but they are still allowed to go to school to get the education they need. This means that we should also teach young girls the importance of getting enough iron in their diets instead of waiting until it's too late. This can break the intergenerational cycle of malnutrition and allow women to have normal healthy children without the risk of a child born with a stunt growth because they were also born with a stunt growth. Since most women are married off at a young age they are usually teenage mothers not knowing much on motherhood let alone dietary needs for themselves and their child. The WHO Global Nutrition organization is working on solutions to decrease stunting in malnourished countries such as Brazil, India, Guatemala, South Africa and the Philippines. Their main target is to have 40% reduction in children under 5 who are stunted.

India has about 61.7 million children who are under 5 and stunted all throughout the country but however Maharashtra, a state in western India is currently able to reduce stunting rates in children under 2 years from 44% in 2005 to 22.8% in 2012. The success of Maharashtra's is based on a whole-of-government approach launched in 2005 called the Rajmata Jijau Mother-Child Health and Nutrition mission. The mission was to reduce child malnutrition in Maharashtra. This was set of by the Maharashtra government with financial aid from Unicef to fight the increasing malnutrition problems in children and to inform parents of the malnutrition problem in their children via graphs and charts. There were village communication meetings utilizing child growth charts to help keep everyone informed. The woman were given vitamin A supplements and were dewormed regularly along with the Maharashtra government setting up nutrition care centres. If one state in India was able to reduce the number of stunted children under the age of 5 and 2 than multiple states throughout India can do the same with knowledge and support. "Many states in India have made significant interventions in this regard, and the positive results are becoming visible."

Some parts of India have slowly started to decrease their number of malnourished children but getting all of India to decrease their number of malnourished women and children would leave a great impact. There will be less stunt growth in children which means children can go to school, educate themselves so in the future they will be able to provide for themselves as well as their families. Women will be physically stable to provide an nurse their children with the proper knowledge they have and it will continue to pass on in their generations. "Nutrition-wise India is importantly simply because of its size and the vast programmes it runs to deal with the issue."

There have been many efforts to improve rural health and education along with maternal and infant health and nutrition. "The problem of malnutrition is not visible or in-your-face... The political attraction of working on nutrition is very low. It doesn't really sell." Not only will educating young mothers on nutritional importance but also letting everyone know the importance of mothers and young children's nutrition. Not only would political support on more would help with education in India because since most mothers are in their teenage and there is gender discrimination in India, attendance rates for girls is far below that of boys. For example, in Rajasthan, only 45% of girls are enrolled in primary school compared to the 55% of boys. Secondary schooling has the lowest rates of girls enrolled because for girls, the main goal is marriage and not necessarily an education. Other times, some families just can't afford to pay for schooling for their children so the parents decide to prematurely end schooling for their daughters. This education issue needs political attention because if young girls aren't getting the proper education needed now they will not be able to educate their own children.

India has the largest number of malnourished children, about 44% of children in India are stunted which is affecting them physically and mentally. Most child malnourishment starts with the mother. Most mothers in India are anemic and have a iron deficiency which affects the child while it is developing. After the child is born mothers tend to nurse their children in most cases up to 8 months when a child should only be nursed exclusively for up to 6 months. This also causes the child to become malnourished

because they aren't getting the proper vitamins and nutrients they need. If women continue to be uneducated on their nutrition especially during pregnancy, there will be an increase in malnutrition and decreased birth rates along with increased infant mortality. Children will continue to suffer stunted growth and be unable to participate in school because stunted growth affects mental capacity. Educating women on the importance of the consumption of different foods full of vitamins and minerals and especially iron consumption is critical. Educating a young mother not only benefits her health but also benefits her child. This knowledge is something she is able to pass on to her child and continue the nutrition continuum.

Encouraging the consumption of dark leafy greens that are high in iron is of great importance. Many meats and fishes are high in iron content but due to cultural and religious reasons India's are unable to avail of this nutritional energy source. Educating and encouraging women to be aware of iron rich food options are just a few simple steps to solving the world's food problem that has been prevalent particularly in India.

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