

# Exploring the Nutritional Public Health Problems Facing India in the 21<sup>st</sup> Century: My experience

Ridgley Schultz, Seth Krivchenia  
Himalayan Health Exchange

## Abstract

India, the world's largest democracy with over 1.35 billion people has, long been the epicenter for malnutrition and starvation in the world<sup>1</sup>. India has also seen great economic growth over the past decade which has had the opposite effect. The national rates the overweight population now exceeds 21% on average and mortality from non-communicable diseases is now the leading cause of death<sup>2</sup>. During my summer, I traveled around northern India and spent time volunteering at clinics in rural villages in Himachal Pradesh. Through my travels, I witnessed firsthand this double disease burden on the Indian public and have explored ways in which India is currently addressing the problem.

## Introduction

I spent this summer on a global health mission with the Himalayan Health Exchange (HHE) in Himachal Pradesh India. During my time with the HHE we set up and ran World Health Organization style clinics in the towns of Udaipur, Tindi, Purthi, and several other surrounding villages. We treated over 900 patients during nine clinic days for ailments ranging from sciatica to diabetes. As a part of the team I helped see and treat patients, run the triage tent, and dispense medications from the pharmacy. The experience was eye opening and incredibly enriching.

Prior to my mission with HHE I was able to spend time traveling in northern India to the cities of Delhi, Agra and Jaipur, three of the largest cities in the region. Although I was not working in a formal capacity during this phase of my trip, I was still seeing the country through a global health lens. Despite its relatively close proximity to the Himalayas, the cities of Delhi, Jaipur and Agra, often referred to as the golden triangle, had a drastically different climate and culture compared to the mountain towns of Udaipur. I was able to observe and talk to many locals about their health and gained a sense of how medicine fit into the fabric of these larger cities.



## Malnutrition

### Factors Contributing to the Malnutrition Problem in India

- The largest contributors to the malnutrition crisis are related to food availability and water sanitation.
- A 2018 UNICEF reports estimates only 20% of children aged 6–23 months in India are eating enough food to meet the minimum dietary diversity requirement<sup>3</sup>.
- Large numbers of children are infected with bacterial pathogens and parasites from unsanitary water sources<sup>4</sup>.

### Consequences of Malnutrition

- Youngest members of the population are always at the greatest risk of mortality from under nourishment.
- 22% of babies are born with low birth weight<sup>5</sup>.
- 50 out of 1000 live births did not complete their first year of life<sup>5</sup>.
- 42.5% of children 0-5 years were underweight, 48% are stunted and 20% were wasted<sup>5</sup>.

### Actions Being Taken to Fight Malnutrition

- Many laws have been enacted throughout the India's history in an attempt to improve the overall nutrition.
- The latest measure in 2013 was a food security bill which entitled up to 75% of rural and 50% of the urban population to receive food subsidies through a targeted public distribution system.
- In addition many global non-profits and governments provide food aid to India.



### Personal Stories

I saw the problem with stunting and malnutrition in children and adults everywhere I went in India. The problem of malnutrition was most significant with children in the clinics where I worked. Almost every child seen at the clinics was stunted or appeared much younger than their stated age. It was clear why food was so scarce in this region: the singular road that connected these villages to more industrialized cities was impassable due to snow 8 months of the year. Every child that we saw in the clinics was given vitamins due to widespread malnutrition. Parasitic infections were another common issue that we addressed at the clinics. Roughly half of the villages where we hosted clinics provided their children treatment for parasitic infections yearly through the schooling system.

## Obesity

### Contributing Factors

- India has seen a massive economic growth with a 500% rise in GDP in the past 16 years and growth of their middle class<sup>1</sup>
- Economic growth has allowed many Indians to adopt western eating habits such as enjoying fast food and soft drinks
- A recent study found that fewer than 10% of Indians engaged in recreational exercise<sup>6</sup>
- Increased pressure on test scores and access to videogames and TV have a negative impact on the activity level of children

### Consequences of Rising Obesity

- Westernization of the Indian diet has led to a significant rise in the spread of non-communicable diseases including Coronary artery disease, Hypertension and diabetes
- A National federation of health report showed overweight/obesity has affected almost 15% of women and 12% of men<sup>5</sup>
- Obesity is more common in urban areas, in wealthier households, and among older adults
- India accounts for 62.4 million diabetics as of 2011 and this number is projected to increase to 101.2 million by 2030<sup>7</sup>

### Actions Being Taken

- Educating the growing middle class on the importance proper nutrition is one of the most important first steps because much of the population is unaware of the consequences of diseases such as diabetes and hypertension
- The government is also beginning to regulate nutrition labeling information placed on soft drinks and junk food
- Restrictions are being placed on how close such food can be sold to schools
- The Indian Council for Medicine is funding more comprehensive and targeted studies into these public health issues.

### Personal Stories

Before I embarked on my journey to India I did extensive research on the diabetic crisis in India to present to my collages at HHE as part of the trip. This research keyed me into observing the body habitus of many of the people India while I was traveling. I found it relatively easy to spot well-nourished gentleman in subway's, driving cabs, and working the desks of hotels/hostels where I stayed. I also saw on every corner a shop that would sell bags of chips, candies and soda even in the most unlikely of places. The nutrition information on these snacks was minuscule or not printed on the packaging at all. When I was with HHE in clinics there were fewer overweight individuals but the majority were women.



## Discussion

India is now facing a double disease burden of malnutrition and increasing rates of overweight/obese individuals. The solution to treating malnutrition seems simple but execution of this goal has been difficult throughout India's history. The problem of malnutrition is not going away anytime soon because at current levels, the impact of food production on the environment will only grow, with food demand set to increase by at least half by mid-century.

Long term affects of malnutrition have been extensively studied. Poor nutrition and stress on the body can raise cortisol levels, decrease sensitivity to insulin and insulin like growth factor. These consequences of undernutrition at a young age can predispose children to increased weight gain when food sources become abundant. These physiological explanations solidify the link between the double disease burden in India and further emphasize the need to address malnutrition in children before anything else<sup>8</sup>.

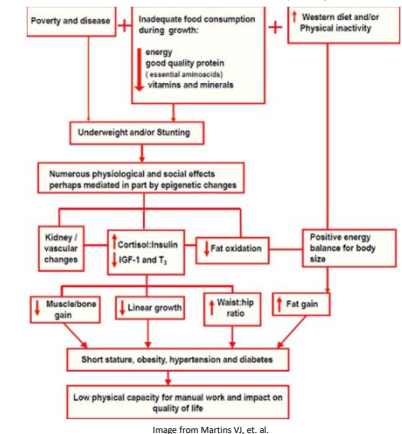


Image from Martins VJ, et al.

## Conclusion

The double disease burden India is facing is multifaceted and comes at significant cost to the productivity to the country as a whole. While steps are being taken to fight malnutrition and obesity, population data statistics show that problems only continue to accelerate. My personal experience in India has opened my eyes to this problem. It was clear through my travels that India is not a healthy country, it is disorganized and chaotic. If India does not solve its malnutrition problem it could be paying for it for generations to come.

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