

GANDHI MARG

VOLUME 42

NUMBER 1&2

Combined Issue
April – June 2020 to July – September 2020

Gandhi Peace Foundation
New Delhi

GANDHI MARG

Quarterly Journal of the Gandhi Peace Foundation

VOLUME 42 □ NUMBER 1&2 □ APRIL – SEPTEMBER 2020

Editorial Team

Chairperson

Kumar Prashant

Editors

M.P. Mathai □ John Moolakkattu

editorgmarg@yahoo.co.in

Book Review Editor: Ram Chandra Pradhan

Assistant Editor: Nisha V Nair

Editorial Advisory Board

Johan Galtung □ Rajmohan Gandhi □ Anthony Parel

K.L. Seshagiri Rao □ Ramashray Roy

Sulak Sivaraksa □ Tridip Suhrud □ Neera Chandoke

Thomas Weber □ Thomas Pantham

Gandhi Marg: 1957-1976 available in microform from

Oxford University Microfilms, 300 North Zeeb Road, Ann Arbor, Michigan, USA;
35 Mobile Drive, Toronto, Ontario, Canada M4A1H6; University Microfilms
Limited, St. John's Road, Tyler's Green, Penn., Buckinghamshire, England.

II ISSN 0016—4437 LIBRARY OF CONGRESS CARD NO. 68-475534

New Subscription Rates (with effect from Volume 34, April-June 2012 onwards)

<i>Period</i>	<i>Individual</i>		<i>Institutional</i>	
	<i>(Inland)</i>	<i>(foreign)</i>	<i>(Inland)</i>	<i>(foreign)</i>
Single Copy	Rs. 70	US \$ 20	Rs. 100	US \$ 25
1 year	Rs. 300	US \$ 60	Rs. 400	US \$ 80
2 years	Rs. 550	US \$ 110	Rs. 750	US \$ 150
3 years	Rs. 800	US \$ 160	Rs. 1000	US \$ 220
Life	Rs. 5000	US \$ 800	Rs. 6000	N.A.

(including airmail charges)

Remittances by bank drafts or postal or money orders only

Copyright © 2020, *Gandhi Marg*, Gandhi Peace Foundation

The views expressed and the facts stated in this journal, which is published once in every three months, are those of the writers and those views do not necessarily reflect the views of the Gandhi Peace Foundation. Comments on articles published in the journal are welcome. The decision of the Editors about the selection of manuscripts for publication shall be final.

Published by Ashok Kumar for the Gandhi Peace Foundation, 221 & 223 Deen Dayal Upadhyaya Marg, New Delhi-110 002 (Phones: 23237491, 23237493; Fax: +91-11-23236734), Website: www.gpfindia.org, e-mail: gpf18@rediffmail.com, gandhipacefoundation18@yahoo.co.in, and printed by him at Gupta Printing and Stationery Service, 275, Pratap Nagar, Street No. 18, Delhi-110 007



Gandhi Marg Quarterly

42(1&2): 25–82

© 2020 Gandhi Peace Foundation, New Delhi

<http://gandhipeacefoundation.org/>

ISSN 0016–4437

Navigating the Report of the Comprehensive National Nutrition Survey (CNNS) from a Gandhian Perspective

Jos Chathukulam

Manasi Joseph

Rekha V

ABSTRACT

In this article an attempt has been made to navigate the report of the Comprehensive National Nutrition Survey 2016–18 from a Gandhian perspective. The major findings of the survey are worrisome developments in respect of many dimensions of nutritional status in the country. Concerted efforts have to be made by various stakeholders in the country as a whole and specific to regions /states to fight malnutrition and its consequences. Gandhi's tenets of nutrition are positive reactions on a query on 'how the poor people can avail healthy food and nutritious diet'. Gandhi tried to find the cheapest substitute nutritious diet at local level. Since the severity of malnutrition varies from region to region and district to district, a paradigm shift to decentralized health practices, food habits, diet and dietary recommendations that reckon with these regional variations is called for. The paper argues that Gandhian perspective on diet and dietetic reform may be seen as viable and alternative strategy to address malnutrition in general and child malnutrition in particular, more so in the light of the threat posed by the Covid- 19 pandemic.

Key words: Gandhi, Nutrition, Health, Children, Covid- 19

Introduction

UNDERNUTRITION HAS BEEN considered as one of the major
April–September 2020

causes limiting India's global economic potential (Copenhagen Consensus, 2012)¹. As a response to this, the Ministry of Health and Family Welfare (MoHFW), Government of India along with UNICEF and Population Council have conducted a Comprehensive National Nutrition Survey (hereafter, CNNS), the first ever in India, during the period of 2016 –2018, covering 29 States and the report has been published in October 2019. This survey was also the largest micronutrient survey ever undertaken globally. It is comprehensive in the sense that the report has been prepared after interviewing 112,316 children and adolescents and grouping them into three i.e. pre – school children (0 -4 years), school – age children (5 – 9 years), and adolescents (10 – 19 years)². The CNNS has covered 38,060 pre - schoolers, 38,355 school – age children and 35,830 adolescents in rural and urban areas across all States in India³.

The report analyses the data based on the rural and urban areas, food habits, literacy level of mothers, religion and income of the families. Across the groups, 75 per cent of participants were from rural areas. The religion wise classification shows that 80 per cent were Hindus, 16 per cent Muslims, two per cent Christians and the remaining came from Sikh and other religions⁴. The location and religion wise classification of the percentage of the participants in the CNNS is proportionate to their respective share in the total population. It is found that 55 per cent children and adolescents follow a strict vegetarian diet without eggs, 36 to 40 per cent eat a non-vegetarian diet and the remaining are ovo-vegetarians who eat eggs. Child undernutrition is caused not just by lack of adequate nutritious food, but by lack of goods and services in the domain of health governance. Undernutrition has long-term and short -term consequences. Nearly half of all deaths of children under five years of age are due to poor nutrition⁵. Evidence from recent research suggests that undernutrition can trap children, families, communities and nations in an intergenerational cycle of poor nutrition, illness and poverty. Strong associations have been established between nutritional deficiencies and impaired brain development and subsequent reduced performance in school education and earning. All forms of undernutrition epitomize societal inequalities and serve as makers for poverty and underdevelopment. It is revealed a one cm increase in height was associated with a four per cent increase in wages for men and a six per cent increase in wages for women⁶. Therefore, investing in the reduction of child malnutrition is paramount for human and economic development. In recognition of the association between nutrition and economic development, the Government of India has launched three flagship programmes which have the potential to address stunting

and under nutritious related issues namely the National Nutrition Mission, National Health Mission and Swachh Bharat Abhiyaan. The government has matched the commitment by creating ambitious targets and supporting efforts with substantial budget allocations. Here, the authors have made serious attention to revisit the report of the CNNS from a Gandhian perspective. This paper is organized in to five parts. The introductory part is followed by Part II, which describes Gandhi's tenets on nutrition. Part III and VI present the CNNS results and the schemes for nutrition management in India. Part V cautions the impact of the Covid-19 Pandemic in the nutrition crisis among children and adults. Part VI concludes with the statement that simple, affordable and good dietary practices advocated by Gandhi has all the necessary ingredients to address the malnutrition of people.

Part II: Gandhi's Tenets on Nutrition

This section attempts to make an assessment of Gandhi's views on health and examines its relevance to India today in the context of the findings of the CNNS. It is attempted to navigate the report of the CNNS from a Gandhian perspective. As an experimental scientist⁷, Gandhi showed considerable interest on the subject of health, nutrition, and dietary recommendations. Gandhi had engaged in experiments on nutrition since his childhood. Gandhi started his dietetic experiments when he was an eighteen-year-old student and all the experiments were done on himself even at the risk of costing his life. Even when his body became very emaciated, he kept on doing small experiments.

For Gandhi, health was not a subject dependent on secondary sources. His position on health was drawn deeply and directly from his experiments with food and diet. The biggest of his experiments was on milk. First, he considered animal milk as a non-vegetarian nutrition and therefore consuming it as a form of violence. And he did not use milk for many years. But when he was seriously ill, he was forced to take milk on the recommendation of doctors. There was strong pressure from Kasturba too, and finally he started taking goat's milk. He considered it also as an experiment and when the result was positive, he had no reservation in recommending animal milk (goat's milk) for the nourishment of human beings. Bhargava and Kant have argued that, Gandhiji always had an open mind, and though inconveniently inquisitive at the beginning, he was the most enthusiastic follower of a principle once he was convinced about its soundness⁸. This is also seen in the case of goat milk. His desire was to find a plant substitute for milk. He also wanted the scientists of the day to address this issue. His approach to salt was the same. He was

more sensible and confident on his self-experiments with milk and salt. He knew that he would be criticized for changing positions and ideas and appearing inconsistent. Therefore, he says: "I would like to say to the diligent reader of my writings and to others who are interested in them that I am not at all concerned with appearing to be consistent. In my search after Truth I have discussed many ideas and learnt many new things. Old as I am in age, I have no feeling that I have ceased to grow inwardly or that my growth will stop at the dissolution of the flesh. What I am concerned with is my readiness to obey the call of Truth, my God, from moment to moment, and, therefore, when anybody finds any inconsistency between any two writings of mine, if he has still faith in my sanity, he would do well to choose the later of the two on the same subject"⁹. This appeal to the readers is more applicable in the domain of his experiments on food and nutrition and that may be the reason for inserting the above statement of Gandhi by Kumarappa in his edited works on 'Diet and Diet Reform'¹⁰. Surprisingly, his profound experiments on the subject have not received adequate attention from the health activists and professionals. As it is already mentioned the subject of health was one to which Gandhi was intensely drawn, and his views, experiments, and findings on it are therefore of considerable academic interest for those who seek balanced and affordable nutritious diet through a non-conventional lens. His major concern was the availability of cheapest nutritious diet for the poor. Gandhi's tenets on nutrition are a positive reaction to a query on 'how the poor people can avail healthy and nutritious diet'. Gandhi tried to find the cheapest substitutes for fruits and they were peanuts, dates and bananas. It is seen that for many years he used them in his meals. His concern was to discover the most nutritious food and preparing it without losing its nutritious value considering poverty of the people and their slender resources. As a result, Gandhiji had experiments with ovens, vessels for cooking, quantity of water to be used, steaming, boiling, baking - determining what ingredients are to be used or avoided in cooking, various ways of making bread, manufacture of jams and *murabbas*¹¹ out of fruits and orange-skins which might otherwise be wasted or thrown away¹², use of green leaves as salads, preparing dishes out of oilcake and soya beans, combining various items to constitute a balanced diet and making up of suitable diets for invalids and convalescents. He himself admits that "As a researcher for truth I deem it necessary to find the perfect food for a man to keep body, mind and soul in a sound condition.I therefore still seek information and guidance from kindred spirits"¹³.

As Kumarappa says, "Gandhiji's interest in food arises partly from

his concern for those around him. When he took to public life, he had a group of followers and their children living with him. He held himself responsible for their well-being. Naturally, when any of them fell ill, he had to see what could be done to restore them to health. He did not wish to use drugs if he could it, as he believed they were injurious to the human system. He was convinced that disease was due to some maladjustment in the system and that all that was necessary to overcome it was to help nature to rectify the wrong. A fruitful way of aiding nature to do this and maintaining the body in health was through proper diet. He therefore became involved in research on diet¹⁴. His concern towards the drudgery of housework by women also prompted him to disapprove the traditional method of cooking. He understood that there was no need to cook all food on fire and cooking them on fire was like destroying them. He realized that if cereals were soaked in water it would be easy for the womenfolk to cook them and also time and cost can be saved. He realized that raw water-soaked grains have to be chewed properly and can be consumed in less quantity than the cooked food and therefore it could benefit the poor in India. For Gandhiji, dietetics¹⁵ is not mere notion or second hand knowledge but the products of experiments. *Ashrams*¹⁶ were the real laboratories where Gandhiji repetitively carried on experiments in diet.

One may trace Gandhiji's interest in diet to Hinduism. The *Bhagavad Gita*¹⁷ speaks of various psychological effects produced by different kinds of food and there is rich mine of literature, tradition and folklore in India regarding dieting for health. Kumarappa asserts that Gandhiji's interest in questions relating to diet are nothing strange and it is in line with India's ancient wisdom. It may not be a bolt from the blue if one argues that even some of the present-day detailed checklist of advisories from the World Health Organizations (WHO) to avoid communicable and non-communicable disease are actually the tenets of good health that Gandhi preached and practised a century ago. Many of his ideas may be helpful in fighting health issues ranging from malnutrition to modern disease. Nutritionists and public health experts agree with the same to an extent.

Gavaravarapu and Hemalatha in their study titled "Thought for Food: Mahatma's Views on Nutrition, Controlled and Balanced Diets" opine that "Today, beset as we are with lifestyle diseases driven by our faulty food choices and sedentary habits, 'locally grown', 'less oil and salt', 'less sugary,' 'farm fresh', 'low fat' have become much bandied words. Nutrition science extols the virtues of fresh vegetables and fruits, probiotic potential of curds or yoghurt and decries ill-effects of sugar and refined flours. The virtues of walking¹⁸, regular

exercise and good sanitary habits are all important. These were the very by-words that Gandhi lived by¹⁹. They have also noted that Gandhi followed a 'minimalistic approach to diet'. For Gandhi, food is viewed as energy and even a medicine that is required to keep one's physique healthy and appropriate for action of energy to be produced for individual action and sustain the body health. For Gandhi, excessive eating, frequent meals and immoderation of concentrated starch and sugar were unhealthy and therefore caused disorders. He advocated every food material only based on its energy and nutritious content rather than its palate value. Gandhi was more cautious on how often and how much to eat and it was one of the themes in his work on "The Moral Basis of Vegetarianism". He said, "Food should be taken as a matter of duty even as a medicine to sustain the body, never for the satisfaction of palate"²⁰.

"We easily fall a prey to the temptation of the palate, and therefore when thing taste delicious, we do not mind taking a morsel or two more. But you can not keep health under those circumstances. Therefore, I discovered that in order to keep health, no matter what you ate, it was necessary to cut down the quantity of your food and reduce the number of meals. Becomes moderate; err on the side of less, rather than on the side of more,"²¹. According to Gandhi "Sieving of the flour should be avoided"²². It is likely to remove the *bhusi*²³ or the pericarp, which is a rich source of salts and vitamins, both of which are most valuable from the point of view of nutrition. The above understanding of Gandhi's tenets on nutrition has been applied as the framework to understand the nutrition status of India. The CNNS is being observed through the lens of Gandhi in the following section.

Part III: Comprehensive National Nutrition Survey (CNNS)

The Union Ministry of Health and Family Welfare released the CNNS in October 2019. Considered to be India's first comprehensive micronutrient²⁴ survey ever, it shows the abysmal status of nutrition among children and adolescents in the country and its impact on their overall health. The CNNS also throws light on the shifting patterns of diet and sedentary lifestyles resulting in obesity, hypertension and other non-communicable diseases. The Survey was conducted between 2016 and 2018. Among all the three age groups, 75 per cent of the participants were from rural areas²⁵. As part of the survey, 51,000 biological samples on children's micronutrient status were also included. Gold standard methods²⁶ were used to assess micronutrient deficiencies, anaemia and biomarkers²⁷ of non-communicable disease among children. Nutritional status and micronutrient deficiencies

among children and adolescents from birth to 19 years and information regarding the prevalence of non-communicable diseases among those aged 5-19 years are mentioned in the CNNS.

Stunting, Wasting and Underweight among Children under Five Years of Age Child undernutrition is understood mainly by measuring height and weight. It can also be understood from clinical manifestations and biochemical markers. Indicators based on weight, height and age are compared to international standards and are most commonly used to assess the nutritional status of children. Stunting (inadequate height for age) shows early chronic exposure to undernutrition; wasting (inadequate weight for height) is a sign of acute undernutrition; underweight (inadequate weight for age) is a composite indicator that includes elements of both stunting and wasting. According to life cycle perspective, the most critical time to meet a child's nutritional requirement is under five years of age in general²⁸ and 1000 days including the stage of pregnancy and ending with the child's second birthday in particular. Here, it is worthwhile to observe the field reflections on undernutrition by Abhay Bang²⁹ who is working among the rural community in the Gadchiroli district in the State of Maharashtra. He has two narratives to understand undernutrition in the rural context of India. Generally, pregnant women do not have enough to eat so that child's malnourishment begins in the womb itself. There is another cultural practice, which also works in favour of undernutrition among the child population. Pregnant women often ate less because of fear that a well-nourished child will create greater pangs during delivery.

A. Stunting

According to WHO, there are four broad sub-forms of undernutrition: wasting, stunting, underweight and deficiencies in vitamins and minerals. Undernutrition makes children more vulnerable to disease and death. Stunting³⁰ among children under five years of age in the life cycle is a major indicator of undernutrition. The CNNS points out that 35 per cent of children in India under five years of age are stunted.

As per the latest Global Hunger Index Report 2019 (GHIR, 2019), in South Asia region, the stunting rate among children stands at 37.60 per cent and wasting rate is at 17.50 per cent. According to the GHI 2019, "India's child wasting rate is extremely high at 20.80 percent—the highest wasting rate of any country in this report for which data or estimates were available. Its child stunting rate, 37.90 percent is also very high"³¹. The recently released Global Nutrition Report 2020 (GNR 2020) states that globally, 149 million children under five years

of age are stunted. As per the GNR 2020, wasting affects 49.50 million children and 20.50 million newborns are underweight or having low – birth weight. The report states that Asia is home to more than half of the world’s stunted children (81.70 million) and 40.10 million children under five years of age are overweight. Regarding India, the GNR 2020 indicates that one in three children under five years of age is stunted and one in five children under five years of age is wasted³². The report also warns that due to the ongoing Covid-19 pandemic, India along with 88 other countries are likely to miss the global nutrition targets³³ by 2025.

As stated earlier, 35 per cent of children under five years of age are stunted in India. As per the Global Nutrition Report 2018, roughly 46 million children among the states in India are stunted. As per the GNR 2018, India accounts for almost a third (31%) of the world’s burden for stunting. But this burden is not evenly distributed among the states because the country is so diverse spatially. Moreover, nutritional status is influenced by three broad factors: food, health and care, which are in turn affected by social, economic and political manifestations. Since the combination and relative importance of these manifestations differ from state to state, the stunting and other forms of undernutrition landscape of India needs to be analysed at state level. Moreover, capturing the ground realities of the causes of undernutrition in a particular state is critical to formulate a policy package which addresses the needs of the most vulnerable sections of the society. Since the country is so diverse, it is important to understand how and why the prevalence of stunting, varies from state to state. The CNNS state wise data on the stunting among children under five years shows that nine states are below the national average and the stunting is very high in states like Bihar (42%), Meghalaya (40.4%), Madhya Pradesh (39.5%) Gujarat (39.1%), Rajasthan (36.80%) and Uttar Pradesh (38.80%). It is followed by Jharkhand (36.2%), Chhattisgarh (35.4%) and Haryana (34.9%)³⁴. States like Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh are known as BIMARU states³⁵ and have a combined 37.42 per cent stunting prevalence among children under five years of age. The lowest prevalence of stunting (16-21 per cent) was found in Goa and Jammu and Kashmir (Refer Table No.1). The differences between states are explained by many factors associated with gender, education, economic status, health, hygiene, and other demographic factors. Again, the aggregate average may hide important disparities among sub national population groups such as by gender, area of residence, economic status of the household and literacy rate of mothers. There are descriptive analyses to understand spatial differences in distribution of stunting at the sub

state level. Stunting varies greatly from district to district (12.4% to 65.1%), with 239 of 604 districts having stunting levels above 40 per cent³⁶. However, district level figures are not available with CNNS. Globally, it is seen that disparities in stunting are well documented. Over one third of the children in rural households are stunted compared to one quarter in urban households at the global level. The same trend is visible in India also. In rural households 37 per cent are stunted whereas it is less by 10 points in urban settings. Though stunting afflicts more children from the rural households than their urban counterparts in all the states except a few (Delhi, Haryana and Goa) there are wide variations among the states. The difference is very high in the states of Telangana (22.50%) and Karnataka (18.70%). Only insignificant difference is noticed in states of Punjab, Jammu & Kashmir and Kerala.

Girls and boys are almost equally likely to be stunted, globally. However, in sub-Saharan Africa stunting troubles more boys than girls. As in the case of sub-Saharan Africa, stunting afflicts more boys than girls in India and the difference is insignificant - only 1.40 per cent. There are gender differences among the states. But this burden is not evenly distributed among the states and in 21 states stunting is seen more among boys. The variation is very high in Himachal Pradesh (9.1%), Punjab (9%), Rajasthan (7.66%), Maharashtra (6.40%) and Andhra Pradesh (6%) whereas it is very negligible in Kerala (0.2%) and Gujarat (0.2%)³⁷. There are nine states where stunting afflicts more girls and this incidence is visible at a higher level in Meghalaya and West Bengal, five per cent and 3.50 per cent respectively. Children in the poorest households are more than twice as likely to be stunted compared to the richest households as per the global statistics. The CNNS points out that wealth disparity is a key factor in the Indian states - 49 per cent of children in poor wealth quintile are more likely to be stunted compared to 19 per cent in the richest quintile. As per the CNNS, the prevalence of stunting peaked at 40 per cent at around two years of age and slowly declined to 30 per cent by the fifth year of life.

The third National Family Health Survey³⁸ (NFHS -3) found that 48 per cent children were stunted whereas it was 38.40 per cent as per the NFHS-4. When the CNNS data on stunting is compared to NFHS 3 it shows a decline by 13.30 per cent and when compared with that of NFHS 4, a meagre 3.70 per cent decline can be noticed. It is a commendable achievement. But what is more worrying is the fact that the incidence of stunting still remains high at 34.70 per cent, as per the CNNS.

B. Wasting

Wasting³⁹ is another form of acute undernutrition and children who suffer from it may have a high prevalence of death. As per GNR 2018, globally, 50.50 million children under five years of age are wasted, and more than half of them, that is nearly 26.90 million are living in South Asia. According to a WHO study, the burden of wasting is highest in South Asia where one in six children is wasted. The burden of wasting is highest in India with more than 25.50 million wasted children⁴⁰. Food insecurity, frequent incidence of diseases, inadequate caring capacities, poor delivery of goods and services under health sector and certain socio-cultural practices are the reasons for the vulnerability of children leading to wasting. As per the CNNS, under the five years of age, 17.30 per cent of children were wasted across the country. Jharkhand has the highest rate of wasting at 29.10 per cent, followed by Tamil Nadu (21%), West Bengal (20.10 %), Madhya Pradesh (19.6%), Assam (19.4%), Chhattisgarh (19.3%) and Karnataka (19.3%)⁴¹. There are 10 states where the prevalence of wasting is higher than the national average (Refer Table No.1). As per the Survey, it was found that Mizoram with 5.80 per cent is the lowest among the states and it is followed by Uttarakhand (5.90%) and Manipur (6 %). The burden is high in rural households and it is also noticed globally. The disaggregated wasting figures in rural and urban households are 17.60 per cent and 16.30 per cent, respectively. Wasting among the children in rural households is more than their counterparts in urban ones in 19 major states. It is the highest in Odisha and Jharkhand with the difference being around eight points. There are two states (Punjab and Tripura) where no difference in wasting is found between rural and urban households. Wasting is predominantly high among the children in the rural households of seven states and Bihar is the highest in this category. It is also found that 18.30 per cent boys are wasted compared to girls whose figures are less by two points. The same trend is seen in varying degrees in 23 states with Meghalaya and Madhya Pradesh at the top position; it is higher by seven and five points respectively. Only in six states wasting is higher among girl children and Delhi is the top in this category with difference being by 12 points.

The NFHS 3 found that 19.80 per cent of children are wasted and it was 21 per cent under the NFHS 4, or an increase of 1.20 percent between the two surveys. It is a disturbing trend when the timeframe of the two NFHS are taken into account. However, a positive trend is seen when the CNNS data on wasting is compared to NFHS 3 and NFHS 4, as it declined by 2.50 per cent and 3.70 per cent respectively.

C. Underweight

As per the GNR 2018, nearly 20 million babies are born of low birth weight/ underweight⁴²each year. The prevalence of underweight is highest in South Asia which has a rate of 33 per cent followed by sub-Saharan Africa at 21 per cent. It is a paradox that some countries have low underweight prevalence but unacceptably high stunting rates, which needs further research. The CNNS also shows that at the national level 33.40 per cent of children under five are underweight. Jharkhand has the highest number of underweight children with 42.90 per cent, followed by Chhattisgarh at 40 per cent and Bihar at 38.70 per cent (Refer to Table No. 1). The burden of underweight is above the national average in seven states whereas it is very low in the North-eastern states and Jammu & Kashmir. The rural- urban divide is very wide with a difference of around 10 per cent higher in rural areas across the states. In all the states except three (Delhi, Arunachal Pradesh and Haryana), the concentration of underweight children is found in rural households. A difference of around five per cent higher in urban households is seen in Delhi whereas the rural-urban divide is less than one per cent in Arunachal Pradesh and Haryana. In Telangana and Odisha, the burden of underweight is among the children is double in rural households compared to their counterparts in urban households. The prevalence of underweight among boys is 32.50 per cent, which is less than the national average of 33.40 per cent and less than that of girls by one percentage. Underweight among boys is very high in the households of Punjab and Jammu Kashmir, higher than girls by around seven points. The burden of underweight divide along gender lines is more among boys in 18 states whereas it is the opposite in the remaining states. Bihar needs special mention because underweight of girl children compared to boys is more by 10 points.

According to the NFHS3 data, 42.50 per cent of children are underweight and it reduced into 35.70 per cent when the NFHS 4 was conducted with a difference of achievement by 6.80 per cent. During the time of CNNS, the burden of underweight has reduced again to 33.40 per cent, a notable decline of 2.30 percent. Details regarding the number of stunted, wasted and underweight children under five years of age in India is given in Table No:1.

Prevalence of Stunting, Wasting and Overweight in Children Aged Five to Nine Years

Table No. 2 has the details regarding the number of stunted, wasted and overweight children aged five to nine years across the states in India. As per the CNNS, in India, 21.90 per cent children aged five to

nine years are stunted. It was found that 23 per cent children in the same age bracket are thin and 3.70 per cent of children are overweight⁴³. As per Table No.2 the prevalence of stunting among children aged five to nine years was lowest in Tamil Nadu with 9.70 per cent and Kerala⁴⁴ at 11 per cent. The prevalence of stunting was highest in Meghalaya with 34 per cent⁴⁵. Nearly one-quarter of children (23%) are thin or have low Body Mass Index (BMI). Among children, the prevalence of low BMI was highest in West Bengal (28.30 per cent), Karnataka (28.20 per cent), and Telangana (28 per cent). It is lowest in Mizoram with 5.10 per cent.

The Prevalence of Thinness and Overweight Among Adolescents in India

As per the CNNS, 24.10 per cent adolescents aged 10 – 19 years are thin. The prevalence of leanness is 33.20 per cent among the adolescents aged 10 – 14 years while it less at 24 per cent for adolescents aged between 15 and 19 years. In the case of overweight, 4.80 per cent of adolescents are overweight. Details regarding the anthropometric profile of adolescents in all the states in India are given in Table No.3.

Anaemia among All Age Groups

The CNNS throws light on the worrisome trend of anaemia among children under five years of age, which is 40.60 per cent. There is no significant variation among boys and girls. In the NFHS 3, the figure was 69.50 per cent and it came down by 18 points under NFHS4. There seems to be a significant drop in anaemia cases between the two NFHSs and it further came down to 40.60 per cent under CNNS. Though the trend is declining over the period of reference from NFHS3 to CNNS, the present rate of anaemia is posing a big challenge to India as it aims to bring down the rate by nine per cent in 2022. In all states except Kerala⁴⁶ anaemia is a serious health problem. As per the CNNS, among children under five years of age, the prevalence of anaemia is highest in Madhya Pradesh with 54 per cent, followed by Haryana at 48 per cent and Delhi at 47 per cent. There is a correlation between the education status of mother and prevalence of anaemia in children. It was found that 40.60 per cent anaemic children have mothers who never went to school. The prevalence of anaemia dropped to 34.60 per cent in children under the same age bracket whose mothers had completed 12 years of schooling. Majority of the children from low income households in rural areas are found to be anaemic as per the CNNS. Again, poor socio-economic status, illiteracy among mothers, improper maternal, infant and child feeding practices, poor sanitary and environmental conditions, restricted access to

quality-oriented health facilities, inequitable food distribution are the identified reasons for anaemia among children and women. This is reinforced by the fact that anaemia is more prevalent among the Scheduled Caste and Scheduled Tribes under the same age bracket. More than half of the vulnerable sections of society, that is around 53 per cent, are found to be anaemic.

Among school age children 23.50 per cent are anaemic and the prevalence is high by three points among girls and by 15 points among Scheduled Caste and Scheduled Tribes. Under the same age bracket anaemia is more prevalent in Tripura at 41 per cent, followed by Assam at 35 per cent, Jharkhand and West Bengal at 34 per cent each. The prevalence of anaemia varied by the schooling status of children. The prevalence of anaemia was higher among out-of-school-children aged five to nine years than those currently in schools.

According to the CNNS, 28.40 per cent of adolescents are anaemic. The disaggregated figure on gender has a variation of 22 points, which is disadvantageous to females. It is found that 39.50 per cent of adolescent females in reproductive age are anaemic while it is only 17.50 percent for males falling under the burden. Among the respondents, 2.70 per cent of adolescent females below 20 years of age who were married and have become mothers were severely anaemic. When compared to general population under the same age bracket, the prevalence is high by around 10 points among Scheduled Caste and Scheduled Tribes. Anaemia among adolescents is high in West Bengal at 46 per cent, Tripura at 41 per cent and Assam at 37 per cent. In these states, the prevalence of anaemia was much higher because of poor socio-economic status and low level of education among mothers. The lowest prevalence of anaemia among adolescents was reported in Nagaland at eight per cent and Kerala at nine per cent. The prevalence of anaemia is lower among school attending adolescents than those out of school.

Iron Deficiency among All Age Groups

The CNNS also looks in to various nutritional deficiencies among all age groups. It shows that 32 per cent children under five years of age, 17 per cent school age children and 22 per cent of adolescents have iron deficiency or low serum ferritin. Female adolescents have a higher prevalence of iron deficiency compared to male adolescents. To explain it further, 31 per cent of female adolescents have iron deficiency while only 12 percent of male adolescents have the same deficiency. Children and adolescents in urban areas have a higher prevalence of iron deficiency compared to their rural counterparts. According to the CNNS the consumption of iron rich foods is higher among Muslim

and Christian children. This is a positive trend when compared with their counterparts from Hindu community.

Folate Deficiency among All Age Groups

Nearly 23 per cent of children aged below five years of age have folate deficiency, (a type of anaemia) and prevalence of folate deficiency is higher among school age children and adolescents. Among the school age children, it is 28 per cent and 37 per cent among adolescents. The CNNS findings point out an interesting association between household wealth and folate deficiency in children. The majority of school age children and adolescents from the wealthiest quintile were folate deficient when compared to their counterparts hailing from poor households. It is found that 30 per cent school age children from wealthy quintile were folate while it was only 21 per cent from the poor quintile. The same trend is seen among adolescents for whom folate deficiency is high among the wealthiest quintile by 15 points.

Micronutrient Deficiencies among All Age Groups

Micronutrient deficiency is defined as a condition in which there is a lack of essential vitamins and minerals required in small amounts by the body for its proper growth and development. Micronutrients are vitamins and minerals that have to be consumed in small quantities that are essential for a healthy body. Vitamin A, iron, zinc, calcium are examples of micronutrients.

A. Vitamin A Deficiency

Among pre-school children, 18 per cent of them are Vitamin A deficient. The prevalence of Vitamin A deficiency is up to 22 per cent among school age children and 16 per cent among adolescents. The prevalence of Vitamin A deficiency is higher among children in poor households. It is reported that 27 per cent of pre-school children among the poor households were Vitamin A deficient while only 11 per cent children in rich households had this deficiency. Similarly, the prevalence of Vitamin A deficiency among school – age children in poor households is 28 per cent while it is only 16 per cent of school – age children from rich households. Jharkhand has the highest prevalence of Vitamin A deficiency among pre schoolers with 43 per cent. Goa has the lowest prevalence in this category. Among school age children, Vitamin A deficiency is higher in Mizoram with 47 per cent, followed by Jharkhand at 42 per cent. Lowest prevalence was recorded at Rajasthan and West Bengal. In the case of adolescents, highest prevalence was reported at Jharkhand with 30 per cent, and Chhattisgarh with 26 per cent.⁴⁷

B. Vitamin D & Zinc Deficiency

In the case of Vitamin D (it is also known as sunshine vitamin) deficiency, despite high level of dairy consumption, nearly 19 per cent of pre – school children in urban areas had Vitamin D deficiency, while it is only 12 per cent in rural areas. In rural areas, children had high zinc deficiency, which causes growth retardation and loss of appetite.

C. Vitamin B12 Deficiency

In the case of B12 deficiency, 14 per cent of pre-school children, 17 per cent of school age children, and 31 per cent of adolescents have B12 deficiency, as per the CNNS. Among pre -school children, Gujarat has 29 per cent with B12 deficiency. Uttar Pradesh and Punjab have 31 per cent and 32 per cent school age children are suffering from B12 deficiency and 48 per cent of children among adolescents in Gujarat has B12 deficiency.

The Role of Mother’s Education and its Impact on Nutritional Status

One of unique aspects of the CNNS is that it establishes a strong correlation between the mother’s education and its impact on the nutrition and health status of children. Around 31 per cent of mothers of children under five years of age never attended school. Only 20 per cent of mothers of children under the age of five years have completed 12 years of schooling. The level of stunting, wasting, and underweight are found to be higher in children under five years of age whose mothers received no schooling as opposed to children under the same age bracket whose mothers have completed 12 years of schooling. To explain it further, 19.30 per cent children under five years of age are stunted and their mothers are not educated whereas only 5.90 per cent of children, whose mothers have completed 12 years of schooling, are stunted. In the case of underweight children, 14.80 per cent children under five years of age are underweight and as per the CNNS their mothers had no schooling. Nearly 5.10 per cent of children whose mothers completed 12 years of schooling are underweight. 5.70 per cent of children wasted had mothers with no education and 4.30 per cent of children whose mothers completed 12 years of schooling were wasted. As per the NFHS 4 data, the prevalence of stunting among children under five years of age, who are born to mothers with no education almost doubled when compared with children of mothers who had 12 years or more schooling. The CNNS points out that a higher per cent of stunting and underweight prevailed among the children who were out of school than school going children. To explain it further, 38 per cent of out-of-school-children were found

to be more stunted and underweight while 20 per cent of school going children were stunted.

One of the major reasons behind low rate of stunting and underweight among school – going children would be the Mid-Day Meal Scheme⁴⁸. The CNNS makes a key observation regarding the Mid-Day Meal Scheme. Around 82 per cent of children in government schools reported that they get mid-day meals. It is an inevitable part of the diet of children studying in government schools in the country. The meal is provided to all students in primary and upper primary schools run by the government, government aided schools and education guarantee scheme schools. Overall, at least half of the children in classes one to eight in India get a mid- day meal, as per CNNS.

As per the CNNS, 42 per cent of women having school – age children have not attended any schools and 30 per cent are suffering from undernutrition in all forms. Meanwhile, 12 per cent mothers of school age children have completed 12 years of schooling and nearly 10 per cent of their children suffered from all forms of malnutrition. Majority of the out-of-school-children belonged to low income households in rural India. In the case of adolescents, around 75 per cent of them were currently attending school. The CNNS indicates that 24 per cent of adolescents are too thin for their age. The main reason behind this is that 53 per cent of the mothers of adolescents who are thin have never attended school and only seven per cent of mothers of this category have completed 12 years of schooling.

As per the CNNS, failure to provide minimum acceptable diet⁴⁹ and poor dietary diversity are to be blamed for poor nutritional status and overall, well-being of children and adolescents in India. In addition to that, it clearly illustrates that educational status of the mother plays a crucial role in ensuring their child get minimum acceptable diet as well as a diversified diet except in the case of breast-feeding practices. One of the most shocking findings in the CNNS is that only 6.40 per cent of children aged 6- 23 months get a minimum acceptable diet. Children under less than two years of age in relatively affluent states like Andhra Pradesh, Karnataka, Tamil Nadu, Telangana, Maharashtra and Gujarat are not getting a minimum acceptable diet. On the other hand, children in states like Chhattisgarh, Jharkhand, Assam, Odisha, generally viewed as backward in terms of development, get better minimum acceptable diet. As per the NFHS 4 data, 9.60 per cent children aged 6-23 months received adequate diet.⁵⁰ When compared with NFHS 4, the figure 6.40 per cent is disappointing as there is a 3.20 per cent decrease. As per the State of the World Children Report 2018 by UNICEF, in India around 10 per cent children under the age of two get minimum acceptable diet. The Global Hunger Index Report

2019 says that in India, just 9.60 percent of all children between six and 23 months of age are fed a minimum acceptable diet⁵¹. Minimum acceptable diet, meal frequency and dietary diversity are the three core indicators of nutrition deficiency among infant and young children. As per the CNNS with higher levels of schooling in a mother, children received better diets or minimum acceptable diets. Only 3.90 per cent of children, whose mothers had no schooling got minimum acceptable diet, while 9.60 per cent of children, whose mothers have completed schooling got minimum acceptable diet. Only 11.40 per cent children of mothers with no schooling received adequately diverse meals, while 31.80 per cent of children, whose mothers had completed 12 years of schooling, received diverse meals. In addition to that, 7.20 per cent children, (whose mothers have no schooling) consumed iron rich foods, whereas 10.30 per cent of children (whose mothers completed 12 years of schooling) consumed iron rich foods. The proportion of children aged two to four, consuming eggs, milk and other dietary products, fruits and vegetables increased with the level of education of their mothers and household status. It was found that 49.80 per cent children in the same age bracket, whose mothers did not go to school, consumed dairy products, while 80.50 per cent of children, whose mothers have completed 12 years of schooling, consumed the same. In the case of school-age children and adolescents, only 25.40 per cent of children in the five to nine age group with uneducated mothers received eggs, but 45.30 per cent of children, whose mothers have completed 12 years of schooling consumed eggs.

The CNNS has come up with some interesting findings, which other nutritional surveys have not taken into consideration. The first one is the link between nutritional status of children and the educational status of the mother. The survey repeatedly stresses on the fact that children receive better diets depending upon the educational level of the mothers. Relation between poverty, illiteracy and malnutrition is an accepted fact.

Prevalence of Non – Communicable Diseases among Children and Adolescents

While the CNNS repeatedly emphasises that higher levels of education among mothers would play a pivotal role in ensuring a better nutrition status and health of their children, there is a flip side too. As per the CNNS, a higher level of education among mothers meant that their children received less meals frequently, mainly due to the chances of being employed, commuting long distances for work and so on. More than half of the children born to uneducated mothers received meals frequently while only 36.20 per cent children of educated mothers

received meals frequently⁵². The Survey indicates that children of well educated and working mothers received meals less frequently and as a result these children were more prone to lifestyle diseases like diabetes. The main reason for this problem is that due to low frequency of meals and due to wealth status, children and their parents resort to fast foods.

Nearly 31.40 per cent school going children and 36 per cent of adolescents ate fried foods once a week. Around 7.60 per cent school going children and 10.40 per cent of adolescents drank aerated drinks once a week. Due to higher consumption of sugary drinks and food high in cholesterol, the prevalence of lifestyle disease is increasing among school going children and adolescents. As per the CNNS, 10.30 per cent of school going children and 10.40 per cent of adolescents are pre – diabetic⁵³. One per cent of school age children and adolescents are found to be diabetic. Around five per cent of school age children are overweight. Tamil Nadu and Goa have the highest number of adolescents who are either overweight. The lowest prevalence of overweight children was in Jharkhand and Bihar, where less than one per cent are overweight.

The CNNS shows that socio-economic status of the households has a direct impact on whether a child will be overweight and underweight. Around one tenth of children in the highest health quintile are overweight while only one per cent of children from households in the lowest wealth quintile are found overweight. Children in urban areas suffered from obesity than those in rural areas. In urban areas, 7.50 per cent of school age children are overweight while 2.60 per cent children falling under the same age bracket are overweight in the rural areas. In the case of adolescents, 9.70 per cent of adolescents from urban areas were overweight as compared to 3.20 per cent in rural areas. Overweight and obesity was least prevalent among Scheduled Tribes⁵⁴. The CNNS points out those adolescents in India are suffering from abdominal obesity and this fat increases the risk for non-communicable diseases. The highest percent of abdominal obesity was measured in children from Nagaland, Arunachal Pradesh and Goa. Around seven per cent of such cases are noticed from each one of these states. Among adolescents, the highest abdominal obesity was observed in Delhi at seven per cent while in Tamil Nadu it is 6 per cent. To evaluate the nutritional status, the sub scapular skin fold thickness of children and adolescents are assessed. Eight per cent school age children had high sub scapular skin fold thickness and six per cent of adolescents also had the same. It was reported that 3.20 per cent of school age children and 3.70 per cent of adolescents have prevalence of high total

cholesterol. Around 26.10 per cent of school age children and 28.20 per cent of adolescents have low levels of high-density lipoprotein (HDL) cholesterol. Prevalence of high low-density lipoprotein (LDL) cholesterol was 3.30 per cent among school age and 3.80 per cent among adolescents. As per the CNNS, around 34 per cent of school age children and 16.10 per cent of adolescents had high triglycerides, a kind of fat in blood. Five per cent of adolescents suffer from blood pressure. Seven per cent of school age children are at the risk of developing chronic kidney disease.

Malnutrition in all its forms, which includes undernutrition, wasting, stunting and underweight as well as overweight and resulting diet related non-communicable diseases continue to be a significant health problem and a burden on India's further development. Various studies and experts have stated that undernutrition in early childhood increases the risk of children becoming obese or overweight later in life⁵⁵. The empirical research also suggests that undernutrition early in life, even when the child is in the womb, can predispose to overweight and non-communicable diseases such as diabetes and heart disease later in life⁵⁶.

Part IV: Schemes for Nutrition Management

This part presents the schemes for nutrition management in India. There is no dearth of policies and schemes when it comes to reducing malnutrition in the country but the impact it has on the health and nutrition of children in India is yet to achieve its full potential. Despite multiple health schemes running in parallel especially those focusing on primary health care of children as well as pregnant mothers, India is lagging behind. Let's first have a closer look at the policies and schemes launched by the Government of India to tackle malnutrition. Here, we are presenting four schemes which have major components to address malnutrition.

A. Integrated Child Development Scheme

Integrated Child Development Scheme (ICDS)⁵⁷ is one among them. ICDS model is dubbed as one of the most successful models in ensuring child health and nutrition. It was launched with the goal of improving nutrition, health and development of children from birth to six years of age, monitoring and educating pregnant and lactating mothers. Launched in 1975, ICDS is considered as one of the largest nutrition schemes in the world, but it is still not enough to combat malnutrition in India.

A study titled the 'Impact of Anganwadi Centres Services on Infant Survival in India'⁵⁸ found that nutritional services offered by the ICDS

April–September 2020

was a significant determinant when it comes to survival of infants. Though it is true that infant mortality rates have come down in the past few decades, ICDS is not solely responsible for that progress. On the other hand, various studies have cast doubt on the findings that ICDS had a significant effect on malnutrition. Despite the support of government in the form of financial assistance for ICDS, the results in terms of a change in incidence of malnutrition have not been forthcoming especially in states like Bihar. The allocation for anganwadi services increased by 11 per cent from Rs.17,890 crores in Financial Year 2018-19 to Rs. 19,834 crores in the financial year 2019-20⁵⁹. There are a large number of vacancies in posts for Child Development Project Officers (CDPOs) and Lady Supervisors (LSs). As on June 2018, one fourth of sanctioned positions for CDPOs and 32 per cent of sanctioned positions for LSs are lying vacant in the country⁶⁰.

Various studies on ICDS programme in India stated that lack of regular program evaluation by Anganwadi Centres (AWCs) have resulted in ineffective and inefficient implementation of services, limited access to AWCs, shortage of anganwadi workers, less salary or increments for anganwadi workers have affected the smooth functioning of ICDS and AWCs. And due to this ICDS has failed to produce tangible results when it comes to tackling malnutrition⁶¹. Failure to raise awareness among the target groups by ICDS functionaries has resulted in children among zero to six years age group, expectant and nursing mothers to be left out of the services offered by AWCs. There were also reports that government has failed to supply the food material to AWCs on time. Apart from that, replacing freshly cooked meals with ready – to – cook mixes supplied by the Center is another reason. It is reported that not all states have replaced freshly cooked meals. While the government claims these ready to cook meals are far safer and they will give adequate micronutrients, health experts and nutritionists have warned that these packaged foods are filled with excessive micronutrients which can pose serious health problems or risks in children. Experts have warned that consuming micronutrient – fortified food on an empty stomach is not healthy and cannot be considered a proper meal. Government, which is trying to reduce the consumption of junk food, is promoting the same by forcing children to consume packaged food. As a suggestion, steps should be taken to strengthen ICDS system and AWCs and authorities have to ensure that healthy meals are provided to children and infants.

B: Mid-Day Meal Scheme

Mid-Day Meal Scheme launched in 1995 is considered to be the largest school feeding programme in the world. Mid-day meal is an inevitable part of the diet of children studying in government schools in India. The primary aim of the scheme was to increase enrolment in primary schools and to ensure the nutrition status of children⁶². National Institute of Nutrition based in Hyderabad conducted a study on Mid-Day Meal Scheme across 70 districts in 20 states and Union Territories in 2017-18 found that 92 per cent of children going to government schools are benefitting from Mid-Day Meal Schemes. It also stated that 80 per cent of the parents who participated in the CNNS agreed that the scheme has improved enrolment as well as the attendance of the children. While this study commissioned by HRD Ministry calls the implementation of Mid-Day Meal scheme as largely successful⁶³. Dreze and Goyal have opined that apart from boosting school attendance and child nutrition mid- day meals have an important socialization value and foster gender equity. They are of the opinion that children learn to sit together and share a common meal and as a result one can expect erosion of caste prejudices and class inequality.

Various reports made by Comptroller and Auditor General (CAG) have casted a doubt on the execution of Mid-Day Meal scheme and its impact on the enrolment, exaggeration of enrolment figures, financial irregularities involved in the implementation process, the issue of poor quality of food being served were mentioned in a CAG report placed in Parliament in 2017. The report said that the quality of food served in school continues to remain poor across the country. Cooking of poor-quality meals in unhygienic conditions, inadequate and poor infrastructure in terms of kitchen sheds and utensils were also reported. The CAG audit conducted in 2015 also came up with similar findings. The audit report stated that enrolment in government schools where Mid-Day Meal Programme is in force has been on the decline for the past few years. From this one can understand that the strategy of the scheme to enrol more children to primary education by ensuring food is not working. CAG audit report 2015 also mentions that children are not getting even the recommended basic minimum quantity of food and it had a negative impact on the nutritional level of children. As per the CAG audit report the number of children who have enrolled in the Mid-Day Meal Scheme has come down from 146.9 million in 2009 - 2010 to 138.7 million in 2013- 2014⁶⁴.

Meanwhile, as per the CNNS, 82 per cent of children in government schools reported that they get mid-day meals. The mid-day meal is an inevitable part of the diet of children studying in

government schools in the country. The meal is provided to all students in primary and upper primary schools run by the government, government aided schools and education guarantee scheme schools. Overall, at least half of the children in classes one to eight in India get a mid-day meal. As per the CNNS, Mid-Day Meal Programme is still a success when it comes to improving nutritional status of children as the survey specifically claims that, the stunting, wasting and low weight among school going children were relatively less when compared with out-of-school-children. On the whole, if the government, be it the Central or State government, should set up a mechanism to monitor the Mid-Day Meal programmes in schools to ensure good quality food are being served, to eliminate corruption involved in the implementation of the programme and fudging of data.

C: POSHAN Abhiyan

POSHAN Abhiyaan (Prime Minister's Overreaching Scheme for Holistic Nourishment)⁶⁵ also known as National Nutrition Mission, launched in 2018 is one among the latest schemes introduced by the Government of India to make the country malnutrition free by 2022. This scheme aims to reduce stunting by two per cent, undernutrition by two per cent, anaemia by three per cent and low birth weight by two per cent per year by 2022. AWCs serve as the point of delivery of all health-related schemes including POSHAN Abhiyaan. But the ground reality is that AWCs are struggling with a lot of problems and an infrastructural problem is one among them. It is seen that 24 per cent of AWCs operated from rented buildings as they don't have a building of their own, 14 per cent of AWCs lacked pucca buildings. In addition to that, only 86 per cent of AWCs had facilities for drinking water, 67 per cent had electricity connections and 68 per cent had toilets which were not functional. Since AWCs play an important role in the implementation of the POSHAN Abhiyaan Scheme, the inefficiency and poor performance of AWCs will have a negative impact on this scheme. A study conducted by the Indian Council of Medical Research in 2019 said that many states in India may not be able to accomplish their targets under POSHAN Abhiyan unless problems related to AWCs are not improved. Here the government should do something seriously to strengthen AWCs as they serve as the point of delivery for all health schemes including that of POSHAN Abhiyan. If AWCs are ill equipped they won't be able to deliver these health schemes on time and this will fail the targets envisioned by POSHAN Abhiyan. It focuses only on undernutrition and anaemia and does not mention over nutrition. The problem of over nutrition should also be addressed through this programme. Policies should also be made to address

obesity and lifestyle diseases among children and adolescents. Taxes should be imposed on unhealthy food and take steps to improve the quality of food provided in public institutions or under the food programme of the government. Encouragement and time should be provided to children to take part in sports and useful exercises at school. If these health issues are not addressed, the burden of non – communicable disease will exact a terrible cost on the development of India and reduce its contribution to global health and economic development.

Lack of dietary diversity can lead not only to high undernutrition but also to obesity and issues related to being overweight. When there is lack of dietary diversity, children will only get nutrition from the same group of food belonging to the high calorie category. But calorie rich foods are deficient in micronutrients and other kind of nutrients like amino acids, fatty acids that are required for growth and development of children.

D: Pradhan Mantri Matru Vandana Yojana

Pradhan Mantri Matru Vandana Yojana (PMMVY)⁶⁶ is a flagship scheme of the government for pregnant women and lactating mothers. It is a direct benefit transfer scheme under which cash benefits are provided to the bank accounts of pregnant women directly to enhance nutritional needs and to partially compensate for wage loss during child birth and child care. Under this scheme, pregnant and lactating women receive a cash benefit of Rs. 5,000 in three installments – one during the early registration of pregnancy, second during ante – natal check – up and registration of birth of the child and third installment during the first cycle of vaccination for the first living child of the family. According to the Ministry of Women & Child Development, there are more than one crore beneficiaries and as of September 2019, Rs. 4000 crores have been disbursed to the beneficiaries. Meanwhile, maternity benefits under PMMVY is not available for women who have regular employment with central/ state government or a public sector undertaking. There have been various opinions regarding the efficacy and effectiveness of the scheme. As per the data provided by Right to Information Act (RTI) in November 2019, around 61 per cent of eligible mothers got the benefit under the PMMVY between April 2018 and July 2019 (38.3 lakh out of the total 62.8 lakh enrolled) and received Rs. 6000 offered per woman under the scheme⁶⁷. But as per the report, the scheme has failed to reach around 49 per cent of pregnant mothers. However, these schemes are yet to make a full-fledged impact on the nutrition and well being of mothers and children. If the flaws and drawbacks in implementation and monitoring of these schemes are

April–September 2020

rectified India might be able to achieve the malnutrition-free status in the near future. But in the present scenario, India has still a long way to go to achieve the goal of a malnutrition free country.

Part IV: Covid 19 and Nutrition

Food security for children and adults has become a cause of concern in the wake of Covid 19 pandemic, especially in India. It is not that India is not doing enough to improve the health of its children and adults,; in fact, India has rolled out various programmes including ICDS, Mid-Day Meal Scheme, POSHAN Abhiyan and schemes like PMMVY. Though these schemes have helped in addressing the nutrition crisis, the worsening social and economic condition in the aftermath of Covid-19 has pushed the nutrition issue to the back seat. Not only that, the progress so far achieved in improving the nutritional status of vulnerable sections including infants and expectant mothers will be reversed.

The nation-wide lockdown to contain the spread of Covid-19 has led to children being deprived of nutritious food. In addition, loss of wages and looming poverty have forced thousands of migrant workers⁶⁸ along with their families to walk miles and miles to their home towns and villages. Majority of them walk with an empty stomach including children and women. Apart from migrant workers, the nutritional status of infants, pregnant and lactating women and senior citizens would be severely affected. The United Nations in its recently released policy brief warned that the economic adversity due to the lockdown in the wake of the deadly pandemic could lead to more child deaths in 2020.⁶⁹

Studies suggest that elderly people with underlying diseases like diabetes, hypertension and cardiovascular diseases are more at risk of getting infected by the novel Corona virus⁷⁰. But that does not mean children will not be infected with Covid-19. As we all know, we need strong immunity to keep diseases at bay. People with weak immune system are at high risk of contracting diseases like Covid-19. Therefore, to have a good immune system, one should consume healthy food. To explain it further, there is a strong connection between nutrition status and immunity. For example, a malnourished child, whose immunity and nutritious status is very weak, can easily get infected by the novel Corona virus. Malnourished children with impaired immune system are more susceptible to deadly diseases and have higher mortality risk.

In addition to that, the prevalence of non-communicable diseases among children and adolescents have been mentioned in the CNNS. Even those overweight and obese are prone to Covid-19. The Global

Nutrition Report 2020 also warns that due to the ongoing Covid-19 pandemic, India along with 88 other countries are likely to miss the global nutrition targets by 2025. In 2012, the World Health Assembly identified six nutrition targets for maternal, infant and young child nutrition to be met by 2025.⁷¹ It requires governments to reduce stunting by 40 per cent in children under five and wasting to less than five per cent. The prevalence of anaemia should be reduced by 50 per cent among women in the age group of 19 – 49 years and ensure 30 per cent reduction in low birth weight and no increase in childhood overweight. It also called for increasing the rate of exclusive breastfeeding in the first six months up to at least 50 per cent.

But as per the GNR 2020, India will miss targets for four nutritional indicators which include stunting among children under five, anaemia among women of reproductive age, childhood overweight and exclusive breastfeeding. The report also identified India as a country with the highest rates of domestic inequalities in malnutrition. “Inequity is a cause of malnutrition — both under-nutrition and overweight and other diet-related chronic diseases. Inequities in food and health systems exacerbate inequalities in nutrition outcomes that in turn can lead to more inequity, perpetuating a vicious cycle,” says the GNR, 2020⁷². It is high time government and policy makers should seriously look into the nutritional and healthy well being of its children as well as pregnant and lactating women, who are apparently more vulnerable to Covid-19 and other diseases.

Part V: Conclusion

The good health practices preached and practised by Mahatma Gandhi over a century ago are relevant even today. Walking and engaging in physical activities, good intake of fresh vegetables and fruits, consuming food items low in sugars, salt and fats, avoid tobacco and alcohol, maintaining environmental cleanliness and personal hygiene are some among them. It is interesting to note that what Mahatma Gandhi advocated and preached decades ago is now being preached by health experts, nutritionists and World Health Organisation (WHO). Lindley⁷³ has also asserted the same in his recent work entitled ‘Gandhi on Health’. According to the CNNS, a balanced diet is essential for healthy growth and development of children and adolescents. As per the CNNS, a balanced diet consists of seven food groups; grains, roots and tubers, legumes and nuts, dairy products, flesh food, eggs, vitamin A-rich fruits and vegetables.

Mahatma Gandhi always recommended consumption of locally grown fresh fruits and vegetables, less sugary, less oily, less salty, and low-fat food. These healthy items of food suggested by Gandhi

decades ago can act as deterrent for various lifestyle diseases plaguing the population of India. The simple diet adopted by Gandhi can be used to address the nutrition crisis in the wake of Covid -19. But to incorporate Gandhi's diet into our daily lives, we have to attain self-sufficiency in food production at local level. Therefore, a sustainable policy package to address affordable healthy food and nutritious diet by decentralized governance may be needed. For instance, Gandhi advocated locally grown fresh vegetables and fruits; it can be made possible if we start small scale farming in our own backyards. With Covid-19 worsening, the economic slump down and looming poverty can lead to severe food insecurity and scarcity in India. There is a strong correlation in income and demand for food. Covid-19 has led to loss of livelihood, jobs and wages and if people don't have any income, they cannot afford to consume healthy and nutritious food. Agriculture sectors serve as the backbone of our country and contribute to 17 per cent of the GDP with majority of people engaged in agriculture and allied activities to make their both ends meet. But the deadly pandemic and the rigorous lockdown have been a huge blow to agriculture and food sectors. This has led to shortage of food items, the prices for essential items are also soaring and this will cause a negative impact on food security. In short, we are going through difficult times; Covid-19 has put both lives and livelihood at stake. At this juncture, Gandhiji's simple and affordable dietary practices can help us to stay healthy.

Appendix

Table No. 1 : Number of Stunted, Wasted and Underweight Children under Five Years of Age in India

Anthropometric Profile of Children under Five Years							
S. No.	State	Indicators Assessed	Male	Female	Urban	Rural	Total
1.	Andhra Pradesh	Children under age five years who are stunted (%)	34.30	28.30	26.80	32.60	31.50
		Children under age five years who are wasted (%)	18.90	15.20	16.80	17.20	17.10
		Children under age five years who are underweight (%)	33.70	33.20	28.40	34.70	33.50
2.	Arunachal Pradesh	Children under age five years who are stunted (%)	29.60	26.20	22.00	29.90	28.00
		Children under age five years who are wasted (%)	7.40	6.30	7.80	6.50	6.80
		Children under age five years who are underweight (%)	16.60	14.30	16.10	15.30	15.50
3.	Assam	Children under age five years who are stunted (%)	34.20	30.60	28.70	32.80	32.40
		Children under age five years who are wasted (%)	9.70	19.00	18.50	19.40	19.40

		Children under age five years who are underweight (%)	30.80	28.00	26.60	29.70	29.40
4.	Bihar	Children under age five years who are stunted (%)	41.30	42.70	40.00	42.20	42.00
		Children under age five years who are wasted (%)	14.80	14.30	18.50	14.20	14.50
		Children under age five years who are underweight (%)	33.90	43.60	34.80	39.10	38.70
5.	Chhattisgarh	Children under age five years who are stunted (%)	36.90	33.60	26.00	37.70	35.40
		Children under age five years who are wasted (%)	20.20	18.30	16.60	20.00	19.30
		Children under age five years who are underweight (%)	41.50	38.40	30.10	42.60	40.00
6.	Delhi	Children under age five years who are stunted (%)	28.10	29.60	28.90	23.80	28.80
		Children under age five years who are wasted (%)	3.90	15.70	14.80	13.10	14.80
		Children under age five years who are underweight (%)	28.40	27.70	28.20	23.70	28.10
7.	Goa	Children under age five years who are stunted (%)	21.10	18.00	20.60	18.30	19.60

		Children under age five years who are wasted (%)	16.10	15.60	16.30	15.30	15.80
		Children under age five years who are underweight (%)	21.30	19.30	19.60	21.20	20.30
8.	Gujarat	Children under age five years who are stunted (%)	39.20	39.00	33.80	42.70	39.10
		Children under age five years who are wasted (%)	17.90	15.90	13.90	19.00	17.00
		Children under age five years who are underweight (%)	36.30	31.70	27.30	38.70	34.20
9.	Haryana	Children under age five years who are stunted (%)	37.20	32.30	36.80	33.90	34.90
		Children under age five years who are wasted (%)	13.10	10.20	14.20	10.40	11.70
		Children under age five years who are underweight (%)	29.90	27.40	28.80	28.70	28.80
10.	Himachal Pradesh	Children under age five years who are stunted (%)	32.70	23.60	18.80	28.80	28.40
		Children under age five years who are wasted (%)	11.50	10.60	14.70	10.90	11.00
		Children under age five years who are underweight (%)	22.10	23.20	16.80	22.80	22.60

11.	Jammu & Kashmir	Children under age five years who are stunted (%)	17.40	13.80	14.60	15.70	15.50
		Children under age five years who are wasted (%)	12.70	16.70	12.90	15.40	14.90
		Children under age five years who are underweight (%)	16.60	10.10	9.40	14.20	13.10
12.	Jharkhand	Children under age five years who are stunted (%)	35.40	37.30	23.60	38.30	36.20
		Children under age five years who are wasted (%)	29.10	29.10	22.10	30.20	29.10
		Children under age five years who are underweight (%)	39.60	47.40	30.00	45.00	42.90
13.	Karnataka	Children under age five years who are stunted (%)	31.90	33.10	19.90	38.60	32.50
		Children under age five years who are wasted (%)	20.20	18.50	19.90	19.10	19.30
		Children under age five years who are underweight (%)	30.70	33.90	23.60	36.60	32.40
14.	Kerala	Children under age five years who are stunted (%)	20.60	20.40	19.50	21.40	20.50
		Children under age five years who are wasted (%)	14.20	10.80	10.30	14.60	12.60

15.	Madhya Pradesh	Children under age five years who are underweight (%)	20.20	17.10	16.80	20.30	18.70
		Children under age five years who are stunted (%)	40.50	38.50	33.60	40.06	39.50
		Children under age five years who are wasted (%)	22.10	17.20	13.20	20.80	19.60
		Children under age five years who are underweight (%)	40.10	37.40	32.70	39.90	38.70
16.	Maharashtra	Children under age five years who are stunted (%)	37.30	30.90	29.70	38.10	34.10
		Children under age five years who are wasted (%)	17.90	15.80	18.80	15.10	16.90
		Children under age five years who are underweight (%)	30.20	31.70	26.50	34.80	30.90
17.	Manipur	Children under age five years who are stunted (%)	29.80	27.90	17.60	33.30	28.90
		Children under age five years who are wasted (%)	6.60	5.50	4.30	6.70	6.00
		Children under age five years who are underweight (%)	13.40	12.40	8.50	14.70	13.00
18.	Meghalaya	Children under age five years who are stunted (%)	37.90	42.90	28.20	42.10	40.40

		Children under age five years who are wasted (%)	18.00	11.30	10.90	15.30	14.70
		Children under age five years who are underweight (%)	29.80	29.40	20.60	30.90	29.60
19.	Mizoram	Children under age five years who are stunted (%)	28.20	26.60	22.00	32.20	27.40
		Children under age five years who are wasted (%)	5.60	6.10	5.30	6.20	5.80
		Children under age five years who are underweight (%)	10.20	12.40	8.10	14.00	11.30
20.	Nagaland	Children under age five years who are stunted (%)	27.10	25.30	20.70	27.60	26.20
		Children under age five years who are wasted (%)	12.70	13.00	9.20	13.80	12.90
		Children under age five years who are underweight (%)	16.6	16.0	12.3	17.3	16.3
21.	Odisha	Children under age five years who are stunted (%)	27.70	30.40	20.00	30.40	29.10
		Children under age five years who are wasted (%)	14.40	13.40	6.40	15.00	13.90
		Children under age five years who are underweight (%)	26.00	32.30	14.30	31.30	29.20

22.	Punjab	Children under age five years who are stunted (%)	28.60	19.60	23.70	24.70	24.30
		Children under age five years who are wasted (%)	9.00	4.10	6.70	6.70	6.70
		Children under age five years who are underweight (%)	22.90	16.20	15.80	21.90	19.70
23.	Rajasthan	Children under age five years who are stunted (%)	40.06	32.40	24.90	39.60	36.80
		Children under age five years who are wasted (%)	14.80	13.80	13.10	14.60	14.30
		Children under age five years who are underweight	33.20	29.50	23.70	33.30	31.50
24.	Sikkim	Children under age five years who are stunted (%)	22.00	21.50	17.10	23.70	21.80
		Children under age five years who are wasted (%)	7.60	6.30	7.00	6.90	6.90
		Children under age five years who are underweight	1.50	10.20	10.10	11.10	10.80
25.	Tamil Nadu	Children under age five years who are stunted (%)	21.00	18.50	18.50	20.80	19.70
		Children under age five years who are wasted (%)	22.30	19.20	19.80	21.50	20.70

		Children under age five years who are underweight (%)	24.30	22.80	21.00	25.80	23.50
26.	Telangana	Children under age five years who are stunted (%)	28.50	30.10	15.70	38.20	29.30
		Children under age five years who are wasted (%)	19.70	16.00	17.80	18.00	17.90
		Children under age five years who are underweight (%)	31.90	29.70	19.70	38.00	30.80
27.	Tripura	Children under age five years who are stunted (%)	32.50	31.40	24.20	34.80	31.90
		Children under age five years who are wasted (%)	14.00	11.60	12.80	12.80	12.80
		Children under age five years who are underweight (%)	22.70	24.80	15.30	26.90	23.80
28.	Uttar Pradesh	Children under age five years who are stunted (%)	38.50	39.20	31.80	40.10	38.80
		Children under age five years who are wasted (%)	19.20	17.70	17.90	18.60	18.50
		Children under age five years who are underweight (%)	34.30	39.50	29.70	38.10	36.80
29.	Uttarakhand	Children under age five years who are stunted (%)	30.40	29.40	23.30	32.40	29.90

		Children under age five years who are wasted (%)	5.10	6.70	5.40	6.10	5.90
		Children under age five years who are underweight (%)	16.90	20.60	15.30	20.00	18.70
30.	West Bengal	Children under age five years who are stunted (%)	23.60	27.10	19.40	26.60	25.30
		Children under age five years who are wasted (%)	21.30	18.90	19.70	20.20	20.10
		Children under age five years who are underweight	29.00	33.00	24.40	32.40	30.90
	India	Children under age five years who are stunted (%)	35.40	34.00	27.30	37.00	34.70
		Children under age five years who are wasted (%)	18.30	16.30	16.30	17.60	17.30
		Children under age five years who are underweight	32.50	34.40	25.80	35.70	33.40

Source: Computed by authors from CNNS and Fact Sheet.

Table No. 2 : Number of Stunted, Thin and Overweight Children Aged Five to Nine Years in India

Anthropometric Profile of Children aged 5-9 years								
S. No.	State	Indicators Assessed	Male	Female	Urban	Rural	Total	
1.	Andhra Pradesh	Children aged five to nine years who are stunted (%)	22.1	20.3	17.4	22.3	21.2	
		Children aged five to nine years who are thin (%)	25.1	16.2	20.5	20.9	20.8	
		Children aged five to nine years who are overweight / obese (%)	8.0	8.5	13.2	6.9	8.2	
2.	Arunachal Pradesh	Children aged five to nine years who are stunted (%)	21.5	15.2	13.9	19.8	18.2	
		Children aged five to nine years who are thin (%)	8.9	9.9	10.3	9.1	9.4	
		Children aged five to nine years who are overweight / obese (%)	9.9	9.1	15.0	7.5	9.5	
3.	Assam	Children aged five to nine years who are stunted (%)	25.7	26.4	25.1	26.2	26.1	
		Children aged five to nine years who are thin (%)	25.5	23.7	15.7	25.5	24.6	

		Children aged five to nine years who are overweight / obese (%)	7.8	6.9	10.0	7.1	7.4
4.	Bihar	Children aged five to nine years who are stunted (%)	27.8	29.2	27.5	28.6	28.5
		Children aged five to nine years who are thin (%)	25.7	17.6	21.0	21.4	21.4
		Children aged five to nine years who are overweight / obese (%)	1.1	0.5	3.3	0.5	0.8
5.	Chhattisgarh	Children aged five to nine years who are stunted (%)	20.2	21.9	17.4	22.0	21.0
		Children aged five to nine years who are thin (%)	26.4	21.0	21.7	24.2	23.7
		Children aged five to nine years who are overweight / obese (%)	1.8	1.7	3.4	1.3	1.8
6.	Delhi	Children aged five to nine years who are stunted (%)	18.0	24.0	21.2	12.0	21.0
		Children aged five to nine years who are thin (%)	19.0	18.0	18.5	18.7	18.5
		Children aged five to nine years who are overweight / obese (%)	7.2	4.9	6.1	4.2	6.0
7.	Goa	Children aged five to nine years who are stunted (%)	13.8	14.6	13.3	15.3	14.2

		Children aged five to nine years who are thin (%)	22.6	19.6	21.1	21.2	21.1
		Children aged five to nine years who are overweight / obese (%)	15.1	13.9	13.0	16.5	14.5
8.	Gujarat	Children aged five to nine years who are stunted (%)	25.0	28.0	23.7	28.1	26.4
		Children aged five to nine years who are thin (%)	22.2	20.0	16.8	23.9	21.2
		Children aged five to nine years who are overweight / obese (%)	5.2	5.8	7.4	4.3	5.5
9.	Haryana	Children aged five to nine years who are stunted (%)	14.5	18.8	17.1	16.1	16.4
		Children aged five to nine years who are thin (%)	22.7	17.8	15.1	23.1	20.4
		Children aged five to nine years who are overweight / obese (%)	3.7	3.6	5.0	3.0	3.7
10.	Himachal Pradesh	Children aged five to nine years who are stunted (%)	17.8	22.5	9.8	20.8	20.3
		Children aged five to nine years who are thin (%)	27.0	17.9	18.3	22.4	22.2
		Children aged five to nine years who are overweight / obese (%)	5.1	2.7	8.5	3.6	3.8

11.	Jammu & Kashmir	Children aged five to nine years who are stunted (%)	13.5	13.1	5.0	15.5	13.3
		Children aged five to nine years who are thin (%)	17.6	15.7	11.0	18.2	16.6
		Children aged five to nine years who are overweight / obese (%)	9.5	8.4	12.8	8.0	9.0
12.	Jharkhand	Children aged five to nine years who are stunted (%)	22.2	27.5	16.4	26.1	24.9
		Children aged five to nine years who are thin (%)	28.6	27.2	29.8	27.6	27.9
		Children aged five to nine years who are overweight / obese (%)	0.4	0.6	1.9	0.3	0.5
13.	Karnataka	Children aged five to nine years who are stunted (%)	22.8	20.2	14.5	24.7	21.5
		Children aged five to nine years who are thin (%)	30.3	26.1	21.4	31.3	28.2
		Children aged five to nine years who are overweight / obese (%)	3.3	4.3	6.2	2.7	3.8
14.	Kerala	Children aged five to nine years who are stunted (%)	10.7	11.6	9.7	12.5	11.2
		Children aged five to nine years who are thin (%)	18.5	13.8	14.1	18.3	16.3

		Children aged five to nine years who are overweight / obese (%)	10.7	8.3	9.9	9.2	9.6
15.	Madhya Pradesh	Children aged five to nine years who are stunted (%)	24.1	18.3	20.6	21.3	21.1
		Children aged five to nine years who are thin (%)	28.7	15.1	21.7	21.8	21.8
		Children aged five to nine years who are overweight / obese (%)	1.8	1.1	2.6	1.2	1.4
16.	Maharashtra	Children aged five to nine years who are stunted (%)	25.1	24.3	22.5	26.6	24.7
		Children aged five to nine years who are thin (%)	26.8	20.0	22.8	23.9	23.4
		Children aged five to nine years who are overweight / obese (%)	7.5	6.1	9.0	4.8	6.8
17.	Manipur	Children aged five to nine years who are stunted (%)	20.4	19.3	12.2	22.6	19.8
		Children aged five to nine years who are thin (%)	7.5	4.7	3.9	6.9	6.1
		Children aged five to nine years who are overweight / obese (%)	11.6	5.5	8.7	8.4	8.5
18.	Meghalaya	Children aged five to nine years who are stunted (%)	35.7	32.2	22.7	36.3	34.1

		Children aged five to nine years who are thin (%)	11.4	7.1	10.2	9.2	9.4
		Children aged five to nine years who are overweight / obese (%)	8.1	4.5	4.5	6.8	6.4
19.	Mizoram	Children aged five to nine years who are stunted (%)	21.9	25.3	15.8	30.1	23.6
		Children aged five to nine years who are thin (%)	6.5	3.7	5.4	4.9	5.1
		Children aged five to nine years who are overweight / obese (%)	10.7	8.1	12.7	6.7	9.4
20.	Nagaland	Children aged five to nine years who are stunted (%)	27.7	21.1	21.5	25.3	24.4
		Children aged five to nine years who are thin (%)	7.2	8.6	9.7	7.3	7.9
		Children aged five to nine years who are overweight / obese (%)	13.1	16.2	14.7	14.7	14.7
21.	Odisha	Children aged five to nine years who are stunted (%)	24.5	18.2	14.7	22.4	21.4
		Children aged five to nine years who are thin (%)	20.7	16.8	12.7	19.7	18.8
		Children aged five to nine years who are overweight / obese (%)	8.7	6.8	18.2	6.2	7.8

22.	Punjab	Children aged five to nine years who are stunted (%)	11.2	13.9	14.7	11.1	12.3
		Children aged five to nine years who are thin (%)	14.0	8.9	12.6	11.6	11.9
		Children aged five to nine years who are overweight / obese (%)	7.9	8.0	8.2	7.8	7.9
23.	Rajasthan	Children aged five to nine years who are stunted (%)	23.3	24.7	19.8	25.0	23.9
		Children aged five to nine years who are thin (%)	22.5	21.5	19.3	22.7	22.1
		Children aged five to nine years who are overweight / obese (%)	1.6	1.5	3.5	1.1	1.6
24.	Sikkim	Children aged five to nine years who are stunted (%)	19.1	18.4	15.1	20.0	18.8
		Children aged five to nine years who are thin (%)	10.7	7.1	8.3	9.2	9.0
		Children aged five to nine years who are overweight / obese (%)	13.1	7.9	16.7	8.4	10.6
25.	Tamil Nadu	Children aged five to nine years who are stunted (%)	9.5	9.8	8.2	11.0	9.7
		Children aged five to nine years who are thin (%)	23.6	14.4	17.9	20.5	19.2

		Children aged five to nine years who are overweight / obese (%)	8.7	10.4	11.4	7.8	9.5
26.	Telangana	Children aged five to nine years who are stunted (%)	15.6	15.3	13.5	16.6	15.5
		Children aged five to nine years who are thin (%)	31.4	24.2	22.9	31.1	28.1
		Children aged five to nine years who are overweight / obese (%)	5.5	4.2	11.0	1.5	4.9
27.	Tripura	Children aged five to nine years who are stunted (%)	29.6	26.1	24.6	29.1	27.9
		Children aged five to nine years who are thin (%)	24.4	14.6	14.8	21.4	19.6
		Children aged five to nine years who are overweight / obese (%)	13.5	9.5	20.1	8.3	11.6
28.	Uttar Pradesh	Children aged five to nine years who are stunted (%)	21.4	20.9	16.2	22.2	21.2
		Children aged five to nine years who are thin (%)	28.1	23.7	21.6	26.8	25.9
		Children aged five to nine years who are overweight / obese (%)	2.3	0.8	4.7	0.9	1.6
29.	Uttarakhand	children aged five to nine years who are stunted (%)	22.4	18.3	16.5	21.9	20.4

		children aged five to nine years who are thin (%)	16.1	12.2	12.5	14.8	14.2
		children aged five to nine years who are overweight / obese (%)	6.8	5.4	10.1	4.5	6.1
30.	West Bengal	children aged five to nine years who are stunted (%)	14.3	23.2	12.5	20.5	19.3
		children aged five to nine years who are thin (%)	28.4	28.2	18.6	30.6	28.3
		children aged five to nine years who are overweight / obese (%)	6.0	3.0	12.8	2.4	4.4
	India	Children aged five to nine years who are stunted (%)	21.6	22.1	17.8	23.1	21.9
		Children aged five to nine years who are thin (%)	25.7	20.3	19.8	24.0	23.0
		Children aged five to nine years who are overweight / obese (%)	4.2	3.3	7.5	2.6	3.7

Source: Computed by authors from CNNS and Fact Sheet

Appendix

Table No. 3 : Number of Thin and Overweight Adolescents Aged 10-19 Years in India

Anthropometric Profile of Adolescents Aged 10-19 Years							
S. No.	State	Indicators Assessed	Male	Female	Urban	Rural	Total
1.	Andhra Pradesh	Adolescents Aged 10-19 who are thin (%)	22.8	16.0	15.8	21.1	19.8
		Adolescents Aged 10-19 who are overweight / obese (%)	7.6	10.5	13.6	7.3	8.9
2.	Arunachal Pradesh	Adolescents Aged 10-19 who are thin (%)	10.8	4.4	9.9	6.8	7.8
		Adolescents Aged 10-19 who are overweight / obese (%)	9.2	12.9	10.9	11.0	11.0
3.	Assam	Adolescents Aged 10-19 who are thin (%)	22.7	16.4	18.2	19.8	19.7
		Adolescents Aged 10-19 who are overweight / obese (%)	2.9	5.6	9.3	3.6	4.2
4.	Bihar	Adolescents Aged 10-19 who are thin (%)	29.8	16.6	21.1	23.0	22.8
		Adolescents Aged 10-19 who are overweight / obese (%)	2.0	1.7	3.1	1.7	1.9

5.	Chhattisgarh	Adolescents Aged 10-19 who are thin (%)	24.6	12.7	15.2	19.2	18.4
		Adolescents Aged 10-19 who are overweight / obese (%)	4.7	3.8	6.7	3.6	4.2
6.	Delhi	Adolescents Aged 10-19 who are thin (%)	21.9	20.5	21.2	23.6	21.3
		Adolescents Aged 10-19 who are overweight / obese (%)	14.0	10.3	12.4	6.9	12.3
7.	Goa	Adolescents Aged 10-19 who are thin (%)	24.2	19.3	20.3	23.7	21.8
		Adolescents Aged 10-19 who are overweight / obese (%)	13.4	15.1	13.7	14.8	14.2
8.	Gujarat	Adolescents Aged 10-19 who are thin (%)	35.6	24.6	26.8	32.6	30.2
		Adolescents Aged 10-19 who are overweight / obese (%)	7.8	8.0	13.4	4.1	7.9
9.	Haryana	Adolescents Aged 10-19 who are thin (%)	22.2	18.6	22.3	19.8	20.6
		Adolescents Aged 10-19 who are overweight / obese (%)	5.3	3.5	7.0	3.3	4.5
10.	Himachal Pradesh	Adolescents Aged 10-19 who are thin (%)	31.4	30.8	14.0	31.8	31.1

		Adolescents Aged 10-19 who are overweight / obese (%)	7.9	3.1	8.5	5.4	5.5
11.	Jammu & Kashmir	Adolescents Aged 10-19 who are thin (%)	15.4	11.4	12.6	13.6	13.4
		Adolescents Aged 10-19 who are overweight / obese (%)	8.7	8.5	11.9	7.7	8.6
12.	Jharkhand	Adolescents Aged 10-19 who are thin (%)	33.0	23.9	25.7	28.8	28.4
		Adolescents Aged 10-19 who are overweight / obese (%)	2.1	1.8	4.0	1.6	1.9
13.	Karnataka	Adolescents Aged 10-19 who are thin (%)	33.7	20.9	21.9	29.4	27.2
		Adolescents Aged 10-19 who are overweight / obese (%)	6.5	8.3	10.7	6.1	7.4
14.	Kerala	Adolescents Aged 10-19 who are thin (%)	24.8	15.5	18.3	21.6	20.1
		Adolescents Aged 10-19 who are overweight / obese (%)	9.3	9.6	10.3	8.7	9.5
15.	Madhya Pradesh	Adolescents Aged 10-19 who are thin (%)	38.5	25.5	25.0	33.5	32.0
		Adolescents Aged 10-19 who are overweight / obese (%)	1.6	1.7	4.9	0.9	1.7

16.	Maharashtra	Adolescents Aged 10-19 who are thin (%)	29.7	18.4	21.4	27.5	24.6
		Adolescents Aged 10-19 who are overweight / obese (%)	8.3	5.3	10.7	3.4	6.9
17.	Manipur	Adolescents Aged 10-19 who are thin (%)	6.8	5.4	6.5	5.9	6.1
		Adolescents Aged 10-19 who are overweight / obese (%)	7.8	9.0	8.9	8.2	8.4
18.	Meghalaya	Adolescents Aged 10-19 who are thin (%)	8.7	4.4	9.8	6.1	6.7
		Adolescents Aged 10-19 who are overweight / obese (%)	2.4	4.7	4.8	3.2	3.5
19.	Mizoram	Adolescents Aged 10-19 who are thin (%)	7.3	5.5	4.4	8.2	6.4
		Adolescents Aged 10-19 who are overweight / obese (%)	7.4	8.2	9.6	6.2	7.8
20.	Nagaland	Adolescents Aged 10-19 who are thin (%)	12.1	7.6	8.2	10.8	10.0
		Adolescents Aged 10-19 who are overweight / obese (%)	9.9	8.8	9.8	9.2	9.4
21.	Odisha	Adolescents Aged 10-19 who are thin (%)	20.6	16.3	11.3	19.7	18.5

		Adolescents Aged 10-19 who are overweight / obese (%)	9.1	6.4	19.5	5.8	7.8
22.	Punjab	Adolescents Aged 10-19 who are thin (%)	17.6	18.1	17.0	18.2	17.8
		Adolescents Aged 10-19 who are overweight / obese (%)	11.3	6.6	9.9	8.7	9.1
23.	Rajasthan	Adolescents Aged 10-19 who are thin (%)	35.1	23.6	23.4	30.8	29.3
		Adolescents Aged 10-19 who are overweight / obese (%)	2.6	3.1	6.6	1.9	2.8
24.	Sikkim	Adolescents Aged 10-19 who are thin (%)	14.5	5.3	10.0	9.5	9.6
		Adolescents Aged 10-19 who are overweight / obese (%)	6.1	12.0	12.8	8.3	9.2
25.	Tamil Nadu	Adolescents Aged 10-19 who are thin (%)	25.1	15.2	17.7	22.6	20.0
		Adolescents Aged 10-19 who are overweight / obese (%)	13.0	15.6	16.4	12.0	14.3
26.	Telangana	Adolescents Aged 10-19 who are thin (%)	34.2	22.7	23.3	31.6	28.8
		Adolescents Aged 10-19 who are overweight / obese (%)	5.1	6.3	10.4	3.3	5.7

27.	Tripura	Adolescents Aged 10-19 who are thin (%)	18.1	14.5	14.4	17.1	16.3
		Adolescents Aged 10-19 who are overweight / obese (%)	9.8	8.5	16.0	6.5	9.2
28.	Uttar Pradesh	Adolescents Aged 10-19 who are thin (%)	28.6	17.0	17.4	23.5	22.5
		Adolescents Aged 10-19 who are overweight / obese (%)	1.2	3.0	6.6	1.3	2.1
29.	Uttarakhand	Adolescents Aged 10-19 who are thin (%)	16.9	13.6	12.5	16.2	15.3
		Adolescents Aged 10-19 who are overweight / obese (%)	5.1	5.2	13.9	2.2	5.2
30.	West Bengal	Adolescents Aged 10-19 who are thin (%)	30.7	20.3	19.3	27.0	25.5
		Adolescents Aged 10-19 who are overweight / obese (%)	9.2	6.0	15.2	5.8	7.6
	India	Adolescents Aged 10-19 who are thin (%)	29.4	18.9	20.5	25.3	24.1
		Adolescents Aged 10-19 who are overweight / obese (%)	4.9	4.7	9.7	3.2	4.8

Source: Computed by authors from CNNS and Fact Sheet.

Notes and References

1. Bjorn Lomborg, *How to Spend \$75 Billion to Make the World a Better Place*, Consensus Center; Second edition (March 1, 2014). This book features the cutting-edge research of more than sixty eminent economists, including four Nobel Laureates, produced for the Copenhagen Consensus. Lomborg is the president and founder of Copenhagen Consensus Center.
2. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. 2019. Comprehensive National Nutrition Survey (CNNS) National Report, Chapter 2, p, 13.
3. Ibid, Chapter 3, p. 47.
4. Ibid, p. 48.
5. R E Black, C G Victora, S P Walker, Z A Bhutta, P Christian, M De Onis, et al. "Maternal and child undernutrition and overweight in low-income and middle-income countries". *Lancet*. 2013 (382) (9890), pp. 427–451. doi: 10.1016/S0140-6736(13)60937-X. - DOI – PubMed.
6. Mark E McGovern, Aditi Krishna, Victor M Aguayo, and SV Subramanian. "A review of the evidence linking child stunting to economic outcomes". *International Journal of Epidemiology*, 2017, pp. 1171–1191.
7. Charles J Koilpillai, "Gandhi's Views on Health", *Journal of Religion and Health*, Volume. 18, Issue No. 1, pp. 60-73, January 1979. URL retrieved: <http://www.jstor.com/stable/27505491>
8. R Kant & B Bhargava, "Medical Legacy of Gandhi: Demystifying Human Diseases". *Indian J Med Res* 2019, p.149, Suppl S1:25-37. (URL Retrieved- <http://www.ijmr.org.in/text.asp?2019/149/7/25/251655>).
9. See, M K Gandhi, *India of My Dreams* (Ahmedabad: Navajivan Publishing House, 2006), p.1.
10. M K Gandhi, *Diet and Diet Reform*, Edited by Bharatan Kumarappa (Ahmedabad: Navajivan Publishing House, 1949.)
11. Murabbas are a category of preserves made with fruits like apples, apricots, plums and Indian gooseberries. It also has medicinal properties.
12. M. K Gandhi, *Diet and Diet Reform*, Editor's Note, op.cit., p.3.
13. Mahatma Gandhi (*Young India*, 22-8-1929), cited in M. K Gandhi, *The Moral Basis of Vegetarianism* (Ahmedabad: Navajivan publications, 1957).
14. M K Gandhi, Editor's Note, *Diet and Diet Reform* 1949, op. cit., p.2.
15. Mahatma Gandhi, *An Autobiography: The Story of My Experiments with Truth* (Ahmedabad: Navajivan Publishing House, 1983). Dietetics is the scientific study of how food and nutrition affect health of the people.
16. Mark Thomson, *Gandhi and his Ashrams* (Mumbai: Popular Prakasan.1993).

17. *The Bhagavad Gita* also known as the Song of the Lord, is one of the world's most influential and widely read spiritual books in the world. Mahatma Gandhi translated the Bhagavad Gita from Sanskrit to his native Gujarati. There is a book called *The Bhagavad Gita According to Gandhi*. The book is based on a series of talks given by Gandhi between February and November 1926 at the Satyagraha Ashram in Ahmedabad, India.
18. As per Gandhi's personal records it has been written that during his active political campaign, he walked around 18 km every day for nearly 35 years. During his political campaigns from 1913 to 1948, he walked a total of 79,000 km, which is equivalent to walking around the earth twice.
19. Gavaravarapu, Subba Rao M, and R Hemalatha. "Thought for Food: Mahatma's Views on Nutrition, Controlled and Balanced Diets." *The Indian journal of medical research* vol. 149, Suppl (2019): S119-S127. doi:10.4103/0971-5916.251668. Also see, Leitzmann ,Claus, "Vegetarian Nutrition: Past, Present ,Future", *The American Journal of Clinical Nutrition* ,Vol 100 ,Issue 1, 2014, URL retrieved- <https://doi.org/10.3945/ajcn.113.071365>
20. M. K Gandhi, *The Moral Basis of Vegetarianism* op. cit., p.7
21. Ibid, p.20.
22. Ibid, p.4.
23. Bhusi is the Hindi term for Bran. Bran consists of minute brown flakes that are left when wheat grains have been used to make white flour.
24. Micronutrients are the vitamins and minerals that our body needs to become a healthy one. Calcium, Vitamin B12, Vitamin C, Iron, Magnesium, Zinc are examples of micronutrients. Although we only need small amount of micronutrients, the problem is that these vital nutrients are not are not produced in the body. They are derived from the nutrient rich food we consume in our daily life. Micronutrient deficiency can lead to stunted growth in children and various other diseases.
25. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. 2019. Comprehensive National Nutrition Survey (CNNS) National Report, Chapter 3, P.49.
26. Reticulocyte Hemoglobin Content (CHr) is a measurement of hemoglobin inside the reticulocyte. Reticulocyte are also known as immature Red Blood Cells (RBCs). It correlates directly with the functional availability of iron in the bone marrow. At present, it is one of the gold standard method for diagnosing iron deficiency. (Reference – Agarwal MB and Swati Pai, 'Reticulocyte Hemoglobin Content (CHr): The Gold Standard for Diagnosing Iron Deficiency,' *Journal of The Association of Physicians of India*, Vol. 65, October 2017. URL retrieved- https://www.japi.org/october_2017/01_editorial_reticulocyte_hemoglobin.pdf)
27. World Health Organization (WHO). 1993. Biomarkers and risk

- assessment: concepts and principles. Geneva Switzerland: WHO, p, 12 World Health Organization defines biomarker as “any measurement reflecting an interaction between a biological system and a potential hazard, which may be chemical, physical, or biological. The measured response may be functional and physiological, biochemical at the cellular level, or a molecular interaction.” For example Blood Pressure is a Biomarker. (URL Retrieved- <https://apps.who.int/iris/bitstream/handle/10665/39037/9241571551-eng.pdf?sequence=1&isAllowed=y>)
28. M de Onis, M., & F Branca “Childhood stunting: a global perspective”. *Maternal & child nutrition*, suppl:12–26. (2016), URL Retrieved- <https://doi.org/10.1111/mcn.12231>.)
 29. Dr Abhay Bhang is a renowned social activist, researcher and founder of Society for Education Action and Research in Community Health (SEARCH), based in Gadchiroli District of Maharashtra. In 2013, an expert committee on Tribal Health was jointly constituted by the Ministry of Health and Family Welfare and Ministry of Tribal Affairs. It was a 12 – member committee chaired by Dr. Abhay Bang.
 30. Stunting (low height-for-age) is used to diagnose chronic malnutrition in school-age children and adolescents.
 31. K. von Grebmer, J. Bernstein, R. Mukerji, F. Patterson, M. Wiemers, R. Ní Chéilleachair, C. Foley, S. Gitter, K. Ekstrom, and H. Fritschel. *2019 Global Hunger Index: The Challenge of Hunger and Climate Change*. (Bonn: Welthungerhilfe; and Dublin: Concern Worldwide, 2019), p. 14.
 32. 2020 Global Nutrition Report: Action on equity to end malnutrition (Bristol, UK: Development Initiatives, 2020).
 33. In 2012, the World Health Assembly identified six nutrition targets for maternal, infant and young child nutrition to be met by 2025. They are the following,
 - 1) Reduce stunting by 40 per cent in children under five years of age.
 - 2) Reduce anaemia by 50 per cent among the women in the age group of 19 – 49 years.
 - 3) Ensure a 30 per cent reduction in low – birth weight.
 - 4) Ensure no increase in childhood overweight.
 - 5) Increase the rate of exclusive breastfeeding in the first six months up to at least 50 per cent.
 - 6) Reduce and maintain child wasting to less than 5 per cent.
 34. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. Comprehensive National Nutrition Survey (CNNS), 2019.
 35. BIMARU is an abbreviation for Bihar, Madhya Pradesh, Rajasthan, and Uttar Pradesh. The term was coined in 1980 by the demographer Ashish Bose.
 36. 2018 Global Nutrition Report: Shining a light to spur action on nutrition (Bristol, UK: Development Initiatives, 2018).

37. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. Comprehensive National Nutrition Survey (CNNS), 2019.
38. The National Family Health Survey (NFHS) is a large – scale survey conducted in a representative sample of households throughout India. The NFHS is a collaborative project of the International Institute for Population Sciences (IIPS), Mumbai, India, ORC Macro, Calverton, Maryland, USA and the East – West Centre Honolulu, Hawaii, USA. The Ministry of Health and Family Welfare (MoHFW), Government of India have designated IIPS as the nodal agency responsible for offering and providing the coordination and technical guidance for the NFHS. The NFHS covers recent trends in population and demographics, health and nutrition indicators, as well as a range of health – related issues, including fertility, infant and child mortality, maternal and child health, prenatal mortality, adolescent reproductive health, prevalence of HIV, tuberculosis, malaria and non – communicable diseases. Four National Family Health Surveys have been conducted so far. The First National Family Health Survey (NFHS – 1) was conducted in 1992 – 93. The Second National Family Health Survey (NFHS – 2) was conducted in 1998 – 99. The Third National Family Health Survey (NFHS – 3) was conducted in 2005 – 2006.(URL – NFHS – 3 <https://dhsprogram.com/pubs/pdf/FRIND3/FRIND3-VOL2.pdf>).The Fourth National Family Health Survey (NFHS – 4) was conducted in 2014 – 2015. (NFHS – 4 - <http://rchiips.org/NFHS/NFHS-4Reports/India.pdf>)
39. Wasting, or low weight-for-height, is a measure of acute undernutrition and represents the failure to receive adequate nutrition leading to rapid weight loss or failure to gain weight normally.
40. According to the UNICEF, WHO, World Bank Group, 2018, An estimated 26 million children aged under five years are wasted in South Asia, which is over half of the global burden of wasting. India is home to four out of five of these children and lies at the epicentre of this global public health problem, with 22 million children wasted, and over eight million severely wasted at any one time, according to the UNICEF, WHO and World Bank Group, 2018. United Nations Children’s Fund, World Health Organisation, World Bank. Levels and Trends in Child Malnutrition: Key Findings of the 2018 Edition of the Joint Child Malnutrition Estimates; 2018. Available from: <https://www.data.unicef.org/wp-content/uploads/2018/05/JME-2018-brochure-web.pdf>.
41. Jos Chathukulam, “Child malnutrition in Karnataka a worrisome development”, *Deccan Herald*, 26 January 2020(URL Retrieved: <https://www.deccanherald.com/opinion/main-article/child-malnutrition-in-karnataka-a-worrisome-development-798390.html>)
42. Underweight, or low weight-for age, is a composite index that takes into account both acute and chronic undernutrition. Children are

defined as underweight if their weight-for-age is more than two standards deviations below ($< -2SD$) the WHO Child Growth Standards median (WHO, 2009).

43. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. 2019. Comprehensive National Nutrition Survey (CNNS).
44. Jos Chathukulam, "Child Nutrient Deficiency in Kerala- An Assessment", *Southern Economist*, Vol 58, 1 March 2020, No. 21.
45. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. Comprehensive National Nutrition Survey (CNNS) National Report, 2019, p. 113.
46. Early writings on Kerala expressed that hunger, malnutrition and anemia had been put under rapid reduction of food rationing system. See Joseph Tharamangalom, "Human Development as Transformative Practice", *Critical Asian Studies*, Volume 42, 2010, Issue 3.
47. *ibid*
48. According to the website of Ministry of Human Resource Development (MHRD), Government of India, Mid – Day Meal Scheme was launched in August 1995 as National Programme of Nutritional Support to Primary Education (NP – NSE). Though cooked food was to be provided, most states (apart from those already providing cooked food) chose to provide "dry rations" to students. "Dry rations" refers to the provision of uncooked 3 kg of wheat or rice to children with 80% attendance. Meanwhile, prior to the central scheme, states in India including Tamil Nadu (1962 – 63), Gujarat (1984), Kerala (1984) implemented Mid – Day Meal Schemes in the primary schools. In the 1990's, nearly 12 states started giving cooked Mid – Day meals to primary school students. In 2001, cooked Mid Day Meal Scheme became mandatory under which every child in all Government and Government aided primary and upper primary school to be served a cooked Mid Day Meal with a minimum content of 300 calories of energy and 8 -12- gram proteins per day for a minimum of 200 days.
49. Proportion of children 6–23months of age who receive a minimum acceptable diet (both minimum dietary diversity and the minimum meal frequency) in the last 24 hours. Minimum dietary diversity is the proportion of children aged 6 – 23 months who received solid, semi – solid or soft foods in the last 24 hours. Minimum meal frequency is defined as the frequency of food intake for children 6 to 8 months twice a day and for 9 to 23 months old three times a day.
50. Oommen C Kurian and Shoba Suri, "Weighed Down by the Gains: India's Twin Double Burdens of Malnutrition and Disease", *ORF Occasional Paper* (New Delhi: Observer Research Foundation, No. 193, May 2019).
51. K. von Grebmer, J. Bernstein, R. Mukerji, F. Patterson, M. Wiemers, R. Ní Chéilleachair, C. Foley, S. Gitter, K. Ekstrom, and H. Fritschel, *op.*

- cit.
52. Ministry of Health and Family Welfare (MoHFW), Government of India, UNICEF and Population Council. Comprehensive National Nutrition Survey (CNNS), 2019.
 53. Ibid.
 54. Ibid.
 55. M Heidari-Beni, "Early Life Nutrition and Non-Communicable Disease", *Adv Exp Med Biol.*2019, pp. 1121:33-40. doi:10.1007/978-3-030-10616-4_4
 56. J Wells, A Sawaya, R Wibæk, M Mwangome, M Poullas, C Yajnik & A Demaio "The double burden of malnutrition: aetiological pathways and consequences for health", *Lancet* (London, England). (2019), 395. 10.1016/S0140-6736(19)32472-9.
 57. Y Sachdev, Y& J Dasgupta. "Integrated Child Development Services (ICDS) scheme", *Medical journal, Armed Forces India*, 57(2), (2001)139–143. (URL Retrieved- [https://doi.org/10.1016/S0377-1237\(01\)80135-0](https://doi.org/10.1016/S0377-1237(01)80135-0).)
 58. M Yastu, "The Impact of Anganwadi Centers Services on Infant Survival in India", *Public Purpose*, 2012 edition, available from: <https://thepublicpurpose.com/2012-edition/>
 59. Budget Brief 2019-20: Integrated Child Development Services (ICDS), Avani Kapur and Ritwik Shukla, Accountability Initiative, Centre for Policy Research, Dharam Marg, Chanakyapuri, New Delhi - 110021 BUDGET BRIEFS, Vol 11/ Issue 3
 60. Ibid.
 61. NITI AAYOG 2014.(URL Retrieved- https://niti.gov.in/writereaddata/files/document_publication/report-awc.pdf) and Timsit Anabelle " Inside India's ambitious effort to provide early care and education to 400 million kids," *Quartz*, India, April, 14,2019. (URL Retrieved- <https://qz.com/india/1584703/indias-icds-anganwadi-system-is-a-challenged-but-impressive-effort/>)
 62. J Dreze and Aparajitha Goyal (2003), "Future of Mid-Day Meals", *Economic and Political Weekly*, vol.38, Issue No. 44, pp 4673-4683
 63. Sumi Sukanya Dutta," HRD Ministry survey reveals mid-day meal scheme a big success," *The New Indian Express*, July 4, 2018. (URL retrieved - <https://www.newindianexpress.com/nation/2018/jul/04/hrd-ministry-survey-reveals-mid-day-meal-scheme-a-big-success-1837862.html>)
 64. Comptroller and Auditor General of India (CAG), Performance Audit of the Mid Day Meal Scheme (2009 – 2019 to 2013 – 14.), New Delhi. (URL retrieved - <https://cag.gov.in/content/report-no-36-2015-performance-audit-mid-day-meal-union-government-ministry-human-resource>)
 65. POSHAN Abhiyan- Scheme for Holistic Nourishment, National Portal of India (URL retrieved -<https://www.india.gov.in/spotlight/poshanabhiyaan-pms-overarching-scheme-holistic-nourishment>)
 66. Pradhan Mantri Matru Vandana Yojana is a flagship scheme of

- Ministry of Women and Child Development. URL retrieved - <https://wcd.nic.in/schemes/pradhan-mantri-matru-vandana-yojana>
67. The RTI was filed by development economists Jean Dreze , Anmol Somanchi and Reetika Khera . Chandra Jagruti, "Maternity scheme reaches only one-third of beneficiaries", *The Hindu*, November 2019. This RTI query was cited in the article. URL retrieved: https://www.thehindu.com/news/national/maternity-scheme-reaches-only-one-third-of-beneficiariesarticle_30009783.ece#:~:text=The%20PMMVY%20is%20targeted%20only,and%20registration%20of%20child%20birth.
 68. As per the 2011 Census that nearly 455 million Indians, or over one-third of the population can be classified as migrants. The Census defines a migrant as a person who is at a different place from his or her "usual place of residence" at the time of Census enumeration. But Economic migrants constitute less than a tenth of all migrants at just over 45 million. The 2016 – 17 Economic Survey found that the total migrant workforce in India was over 100 million in 2016.
 69. United Nations, Policy Brief: The Impact of Covid 19 on Children, April 15, 2020. (URL Retrieved - https://unsdg.un.org/sites/default/files/2020-04/160420_Covid_Children_Policy_Brief.pdf.)
 70. L Liu, Y Chen, R Lin, & K Han, "Clinical features of COVID-19 in elderly patients: A comparison with young and middle-aged patients", *The Journal of Infection*, 80(6),2020, e14–e18. (URL Retrieved: <https://doi.org/10.1016/j.jinf.2020.03.005>)
 71. In 2012 World Health Assembly, op. cit .
 72. 2020 Global Nutrition Report op.cit.
 73. M Lindley, *Gandhi on Health* (Jalgaon: Gandhi Research Foundation, 2019). Gandhi scholar and economist Mark Lindley is of the opinion that Gandhi's diet and healthcare concerns harmonize very well with the diet and health in the 21st century.

JOS CHATHUKULAM is Professor, Sri Ramakrishna Hegde Chair on Decentralization and Development , Institute for Social and Economic Change (ISEC), VKRV Rao Road, Nagarbhavi Post, Bengaluru, 560072 .He can be reached chathukulam@isec.ac.in Mobile No. 80860 93363

MANASI JOSEPH is Research Associate, Centre for Rural Management (CRM) Kottayam, Kerala 686016. After completing her Masters on Communication, she did post graduate certificate course in New Media Journalism, from Sheridan College, Oakville Ontario,

April–September 2020

82 • GANDHI MARG

Canada. (e-mail: manasijoseph@gmail.com, Mob No.7994718268)
REKHA V is Associate Fellow, Centre for Rural Management (CRM)
Kottayam, Kerala 686016. Her research interests are women studies,
rural development, sanitation, drinking water and policy studies.
She did her Masters in Computer Science from MG University,
Kottayam, Kerala. (e-mail: rekhasunil4ever@gmail.com, Mob.No.
7356885487)

Volume 42 Number 1&2