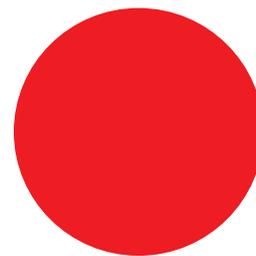


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March - June 2013

Unfair, Unscientific Criticism of Nutrition-Researchers in India

-Anant Phadke¹

Towards a Critical Medical Practice (Anand Zachariah, R. Srivatsan and Susie Tharu (Eds.), Orient BlackSwan Publications, 2010), a book based on the theoretical work on health and health care in India by the CMC-Anveshi Collective contains a chapter, 'The Career of Hunger: Critical Reflections on the History of Nutrition Science and Policy' by Veena Shatrugna. An abbreviated version of this chapter has appeared in the periodical, *Agenda*, (Issue No. 24, 2012) guest-edited by Sandhya Srinivasan. In this current paper, I have questioned the main argument in the essay by Veena Shatrugna (VS). VS's essay has been uploaded and can be accessed from <https://docs.google.com/open?id=0B9nIO6310p6RQ0NVT11FWmpTcEk>. In this current paper I have mentioned the page numbers from the book.

Veena Shatrugna's (VS) attempt to find out a link between the work of the nutritional scientists in India, their recommendations and government policy is welcome. Unfortunately, her criticism of the concerned nutritionists is not evidence-based and is somewhat unfair.

I would first present her main criticism in her own words and would then share my comments on it.

Veena Shatrugna's Criticism of Nutrition-Researchers

Her criticism appears in a summary form in a para on p.116-117 of the book as follows - "Nutrition research in the 50's and 60's though brilliantly innovative and deeply committed to the welfare of Indians, simplified the science of food further with indices and correction factors, using concepts like consumption units, biological value of proteins, RDA based on calories, calorie needs of workers, vegetable sources of proteins etc., which then fed nutritional policy. Over a short period these concepts were recast and deployed in administrative initiatives that, we will argue, systematically transformed the diets of the poor in India to plain cereals as the major, or perhaps the only, source of calories, devoid of any other nutrient. During periods of food shortages and famine of the

60s, the search for a "scientific (2400 Kcal) but low cost 'Balanced Diet'" resulted in the discovery that cereals were after all the cheapest energy foods, and could provide the requisite calories. The classic paper on 'The Myth of Protein Gap' sealed the fate of the poor, and cereals begin to find a central place in all discussions on calorie requirements, and government nutrition programmes such as PDS, food for work programmes, ICDS and in the planning of diets for students, workers, soldiers, prisoners, etc."

VS further argues: "Instead of factoring in calories from a variety of foods, the scientist/bureaucrat planners over the next 20-30 years, discovered the cheapest source of calories which was cereals and expected populations to consume enough (about 450-500 gm) so that they get 2400 calories, and thus cereals begin to find a central place in discussions on calorie requirements and in the planning of diets." (p. 123)

In a sub-section 'The RDA debates and the Elimination of Proteins' (mark the phrase 'elimination of proteins' - Anant), VS argues:

"By 1968, an updated publication confidently states, 'In devising cheap well balanced diets in India, economic considerations often preclude the inclusion of milk or other animal foods in adequate amounts A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food.'" (Gopalan, 1968: 6-7). This balanced diet however was separated for the vegetarian and non-vegetarian groups and the latter were given an allowance of 45 gm of pulse and 100 gm of milk with added 30 gm of meat or fish and 30 gm of eggs." (pp. 127-28)

VS argues further:

"In hindsight, it is difficult not to be critical about this eradication of flesh foods from normative diets, in spite of their proven superior efficacy as proteins for the body. The entire debate on RDA is directed at finding the theoretically adequate, but most economic solution to a difficult problem. However

¹ Email: anant.phadke@gmail.com

the specific governmental solution arrived at clearly draws on a culture of vegetarianism common to the planners who thought on behalf of the nation. Food options and crucial dietary diversity for the majority of poor, dalits, BC, tribals, minorities etc., in fact for 80-85% of the population had been closed in the structure of plan thinking. Thus, it was enough to provide for distribution of cereals with little scientific consideration about what these cereals were eaten with” (pp.128-129).

In the sub-section ‘The myth of protein gap,’ VS argues:

“The work on the biological value of proteins from vegetarian sources had, as we have seen, put its full weight behind the consumption of vegetable proteins as against milk proteins or even animal proteins, by advocating a ratio of cereal to pulse intakes. As a result, the story of “poor quality” of cereal and pulse protein ends and RDA for proteins is drastically reduced (Patwardhan, 1960). Vegetarianism for the poor had been endorsed scientifically; but the next step takes the country hurtling down a cereal trap.

VS continues: “In the late sixties, with food shortages and famine like conditions in India there was pressure from the West that India accept food aid and specially milk powder proteins for starving children. In response to this the Nutrition Research Laboratories published a review of diet surveys carried out on children subsisting largely on cereals and reported that the major bottleneck in the diets of preschool children as far as India was concerned was calorie deficiency (which by then meant of course cereal deficiency!). The paper concluded that, “These studies would indicate that if the children consume the same type of diets on which they have been subsisting, in amounts sufficient to satisfy their calorie needs, the problem of protein calorie malnutrition would be greatly minimized. It is clear by the same token that provisions of protein concentrates in the face of existing calorie deficiency would perhaps be a wasteful approach towards solving this problem in these children” (Gopalan, 1970:36).” (pp. 129-30)

VS further quotes Gopalan, “There has been unfortunately, an overwhelming emphasis on protein concentrates and special protein formulations in the prevention and control of under nutrition In the light of recent reassessments of protein and calorie requirements and in view of ‘precise data’ now available with regard to the actual diets of poor segments of the preschool child populations in India, it is clear that the major deficiency in the diets of preschool children in India is calorie deficiency. Under these circumstances, the obvious approach would be to promote increased production and facilitate better distribution and utilization of existing conventional foods rather than a diversion of such foods for the preparation of sophisticated food formulations (Gopalan, 1970:37).” (pp. 129-130)

VS then comments: “Paper calculations thus allowed the conclusion that children consuming more of the usual diets would get adequate calories and proteins. The low cost scientific recommendation for children was a largely cereal based diet with inadequate or virtually no pulse, milk, eggs or meat. The

calculations were based on 6-8% protein in every 100 gm of cereal.” (p. 130)

VS’s overall comment is: “.... governmental policy receives the backing of science in support of its priorities, and therefore ultimately for the specific details through which it articulates its developmental goals: thus, the poor need only eat cereals.” (p.130)

VS further comments: “Whether it was C. Gopalan, V. M. Dandekar, Nilakanth Rath, or M.S. Swaminathan, among many others, they looked for simple, upscaleable formulations at almost a laboratory level that could be applied across the nation. So a thesis like ‘adequate calories are the solution to the country’s food problem’ held an inherent appeal to both scientists and administrators, and of course bred a whole class of large-scale single grain farmers.” (p. 131)

Comments on Veena Shatrugna’s Criticism

In this above critical account of the work and recommendations of these nutritionists, VS makes three points of criticism –

1) *Some Indian nutritional scientists have put full weight behind the consumption of vegetable proteins as against milk proteins or even animal proteins. This she attributes to the vegetarianism (in their personal life) of the scientists themselves.*

As regards this criticism, VS has not quoted any scientific evidence to challenge the claim that “A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food.”

Secondly she does not give any rationale of why she thinks that it is wrong to point out that the problem of malnourishment in India is not primarily that of protein deficiency but of food deficit and that cheaper sources of proteins are available in vegetarian sources, their quality can approach that of the animal proteins with judicious mixture of cereals and pulses. This attempt to point out to the cheaper, vegetable sources of proteins is to be seen in the context of the Western lobby’s attempt to sell then idea of protein concentrates to the Indian policy makers to overcome the malnourishment in India and to market protein concentrates in India.

2) *Recommended Dietary Allowance (RDA) for proteins has been reduced by 30%. (Patwardhan, 1960).*

VS refers to a paper by Patwardhan which estimates the caloric requirement as 2770 calories for men. Here again, VS has not quoted any scientific evidence to challenge the new estimation done by Patwardhan et al of calorie/protein requirement of the Indian people. I have not accessed this paper published in 1960. But the publication - Nutritive Value of Indian Foods (by the National Institute of Nutrition, 1989 edition, reprinted 2007) gives in Annexure I, RDAs for Indians. Here the caloric requirements for reference man (60kg) are given as 2425 (sedentary), 2875 (moderate), 3800 (heavy work) calories respectively. The protein requirement is given as 60 gms for all the three categories. If VS thinks that these RDAs are unscientific, the scientific evidence in support of her

belief should have been presented.

- 3) *“Vegetarianism for the poor had been endorsed scientifically; and next step takes the country hurtling down a cereal trap.”*

I would point out that Gopalan et al were not at all arguing that only cereal-based diet is nutritionally adequate. Their argument was - adequate amount of cereal-pulse mixture in appropriate proportion would prevent both caloric and protein deficiency. Their argument was for cereal-pulse mixture and not for cereals alone as inferred by VS. If Indian economists and other policy makers while deciding poverty line or while deciding that only cereals would be given in the rationing system, have ignored/misused the nutritional requirements estimated by NIN scientists, we cannot blame the NIN scientists for this.

Let me cite an example of unscientific basis of recommendation of such a Committee in Maharashtra. The Page Committee was set up in Maharashtra in 1974, to decide the minimum agricultural wages. It had used 2300 calories as the basis of their estimation of minimum agricultural wage. Abhay Bang, who had recently done a short course in NIN, pointed out that the NIN/ICMR RDA for heavy work is 3800 calories and he had started lobbying for higher minimum wages for agricultural workers on this basis. In support of this initiative, on behalf of the Lok Vignan Sanghatana I was involved in gathering signatures of doctors in the Medical Colleges to support this demand (based on RDA for heavy work) for higher minimum wages for agricultural workers. In talking to these doctors we used the NIN recommendations as our basis.

VS asserts that “The low cost scientific recommendation for children was a largely cereal based diet with inadequate or virtually no pulse, milk, eggs or meat.” She does not explain who made these calculations and decided which norms. But it is quite clear that it is unfair to attribute Gopalan et al with the recommendation of a diet without pulses. Gopalan and colleagues used to advocate a combination of cereals and pulses.

It is true that Gopalan did argue that in Indian malnourished children the primary deficit is of calories and not primarily of proteins. He and colleagues did talk about “the myth of the protein gap”. In explaining this point, Gopalan reports studies done in India. He reports “While the diets of 90% of children were deficient in calories, the diets of only 35% of the children were deficient in proteins. ----- Practically no situation was found in which the children’s diets were adequate in calories but deficient in protein alone.” (C. Gopalan, *The Contribution of Nutrition Research to the Control of Under-nutrition: The Indian Experience, Annual Review Nutrition, 1992, page 3*. Thanks to VS for sharing this paper with me). In this paper Gopalan does report an interventional study of malnourished children which showed that “...when the calorie gap in these diets was bridged by supplementation with 300 kcal derived from (“empty calories”) carbohydrate and fat sources (wheat flour, sugar, and edible oil) with little additional protein (no more than 3 g) growth performance was significantly

improved and clinical manifestations of PEM were averted.” (p. 3).

Though in this study 300 empty calories were added, while recommending RDAs, Nutritive Value of Indian Foods mentioned above, has advised 2 gm of vegetable proteins per kg of reference body weight per day for children, whereas the recommendation for adults has been 1gm per kg per day of vegetable proteins or 0.7 gms of egg protein per kg, per day. To achieve this much of protein intake, in adults the NIN recommendation has been 40, 50, 60 gms of pulses respectively for sedentary, moderate and heavy workers along with 460, 520, 670 gms of cereals respectively. (Pl also see <http://icmr.nic.in/final/RDA-2010.pdf> for the current, latest guidelines)

VS has asserted that “Insistence on vegetarian sources of proteins followed up with programmes that supplied cereals invited large-scale and multiple nutrient deficiencies among populations. (p. 134) But the fact is –

Balwadi nutrition programme started in 1970 is to provide 300 Kcal and 10 gm of proteins. To provide 300 Kcal with cereals would require 85 gms of cereals and that would yield about 5 gms of proteins. Hence the Balwadi supplementation is not of cereals alone.

The recommended Mid Day School Meal is to contain 75 gms of cereals and millets with 30 gms of pulses. Planners, administrators, politicians may have conveniently diluted on paper or in practice, the recommendations of the nutritionists. But it would be unfair to criticize the nutrition-scientists for these things.

VS starts her essay with a comment: “Perhaps paradoxically, chronic hunger as it exists in India can be largely traced to the rapid scientific advances in the area of food and nutrition analysis, leading to classification of foods into calorie rich foods like cereals, protein foods, and protective foods providing vitamins, minerals etc.” (p.116). It is a bit naïve to attribute chronic hunger in India to developments in science. In reality chronic hunger should be traced to the political economy of post-independent India.

I do not know why VS has titled her essay as “Career of hunger” and what is meant by this title. In my view it would be unfair to say that while these nutritionists on the one hand made a career out of people’s hunger and on the other hand were party to pushing Indian people into malnourishment.

This issue of primary food deficit rather than primary protein deficiency was introduced to us in MFC by the excellent lucid article by Kamala Jaya Rao in the MFC Bulletin in 1976. Many of us have very high regards about Kamalabahen (then the editor of the MFC Bulletin in late seventies-early eighties), for her scientificity, humanism and integrity. In fact part of the reason why I am writing this response is my deep sense of respect to Kamalabahen, one of the advocates who exposed the ‘myth of the protein gap’.

My critical analysis above of VS’ essay is no reflection on the overall welcome addition by the CMC-Anveshi collective through their insightful essays in this book.

1. Response to Dr. Anant Phadke

-Veena Shatrugna¹

At the outset I must thank Anant for reviewing my essay ('The Career of Hunger' in *Towards a Critical Medical Practice*, Anand Zachariah, R. Srivatsan and Susie Tharu (Eds.), Orient BlackSwan Publications, 2010), and raising some questions.

Before addressing the list of his problems in my arguments, I would like to clear two confusions:

1. In my paper I have tried to show that animal proteins disappear from the 'Recommended Dietary Allowances for Indians, (RDAs)' [an important document of the National Institute of Nutrition (NIN) and the Indian Council of Medical Research (ICMR) revised every 10 years], and eventually even from actual Indian dietaries. This elimination has been facilitated somewhat paradoxically by the brilliance of scientific advances in protein chemistry, and the study of their biological actions in vitro, both of which inform policy that addresses the urgency of India's hunger in the context of massive economic constraints. These scientific advances and policy decisions were conducted exclusively by an upper class, upper caste elite intelligentsia composed of people like us.

2. I have nowhere stated that animal proteins or skimmed milk must be given in excess in lieu of calories. My essay explains that animal protein is absolutely necessary for carrying out the 'actions of proteins', especially during the growth phase of children, and during pregnancy and lactation. (It is assumed that the person has adequate calories for energy, see pp.124-125). I do not advocate animal protein for energy, yes please - *nowhere do I advocate animal proteins for energy.*

Energy/calories must come from foods like cereals, potatoes, sugar, oil, and even from pulse, all of which have carbohydrates and provides calories. In the absence of calories from food or during a famine and starvation, whatever proteins is consumed as food, and worse, the person's muscle is broken down and used for energy. However Dr. Kamala Jaya Rao in her piece in the *mfc bulletin* keeps stating, and I quote,

As mentioned earlier, as long as energy is limiting protein would be used up as energy. Therefore, as long as the calorie deficit is not made up, these expensive foods will not bring about the desired effect. To provide the needed calories by these

foods is a wasteful expenditure, which neither our country nor any other developing country can afford. Our production of milk, poultry and sea food is much less than that of the cereals and pulses. Therefore, if we place a priority on these foods, they would have to be imported in bulk quantities. [...]

Inclusion of animal foods in the diet is no doubt beneficial. Animal proteins are superior to/vegetable proteins and animal foods provide other essential nutrients also. However, providing animal foods as energy is a wasteful expenditure.

(Kamala S Jaya Rao, 'The Myth of Protein Gap', *mfc bulletin*, April 1976)

Instead of saying

- a. adequate calories must come from foods like cereals, pulses, sugar, potato, oil etc. and
- b. animal foods provide the necessary protein for growth, in children and pregnant women, milk secretion during lactation etc.,

she acknowledges the superior nature of animal protein, but slips into saying "animal food as energy is a wasteful expenditure".

Anant, Kamala and I are really saying the same thing and that is "animal foods ARE superior" except that she argues against it for energy in the interests of the nation, and I am saying that it is essential as protein for its important functions.

Your points are italicized through out

Some Indian nutritional scientists have put full weight behind the consumption of vegetable proteins as against milk proteins or even animal proteins. This VS attributes to the vegetarianism (in their personal life) of the scientists themselves AND she has not quoted any scientific evidence to challenge the claim that "A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food."

Response

Anant, at the outset I would like to clarify two issues the first clarification is politically important but short, and the second is scientific and somewhat lengthy.

First, there are two types of Vegetarians in India

¹ Email: veenashatrugna@yahoo.com

1. **Elite vegetarian food practices** include liberal amounts of pulse, milk proteins from paneer, curd, tea, milk etc. nuts, fruits, berries and vegetables, which are rich sources of good quality proteins and vitamins, minerals, anti-oxidants, flavonoids, lycopene, etc. These nutrients are known to enhance immunity and by their action protect against a large number of chronic diseases, and even cancers. It is important to remind ourselves that milk proteins are animal proteins consumed in liberal amounts by this class of vegetarians.
2. **Vegetarianism proposed for the poor** (see RDA for Indians 1986-2011) primarily cereal calorie focused, with minimal amount of pulse (40gm) and milk (150ml sufficient for 2 cups of tea), and no other animal protein like meat, egg, fish, beef, small animals, fowl, etc. included. Even fruits and nuts are absent in these RDA. The poor who belong to this category cannot afford to buy even this amount of pulse and milk because of low wages. [Wages are based on cheapest source of calories, that is cereal calories.]

For the first category, vegetarianism is a matter of choice; it is the second category we are criticizing.

Second I want to make a note on proteins.

Proteins - Sources, functions, etc. At this stage it is also important to recap the role and functions of proteins in the body:

Proteins are largely present in animal foods like eggs, milk, fish, chicken, meat, birds, insects etc. Proteins of an inferior quality are also found in pulses (20-30%), cereals (6-12%), nuts and oilseeds (20-40%) etc.

- a. Proteins are essential for laying down muscle mass, during growth (reflected in height increase); good quality protein intakes in pregnancy also determines the size and functions of vital organs like the liver, pancreas, and kidneys of the newborn (Barker's Hypothesis). In brief proteins determine the size and possibly the functions of most of the organs in the body.
- b. Proteins are necessary for the synthesis of small molecules which regulate biochemical reactions, these are called enzymes. Albumins and Globulins, for example are carrier proteins, and immunoglobulin and cell receptors maybe categorized as functional proteins. Many of the hormones like insulin, growth hormones, LH, FSH, TSH, HCG, etc., are also proteins. Proteins of course make up the major part of haemoglobin

also.

- c. Most importantly proteins are necessary for tissue repair after the daily wear and tear of the body cells.

So is there a "a judicious mixture of vegetable foods like cereals and pulses which can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food." The answer is NO if you are concerned about each of the above functions. Please see explanation given below.

Stunting in India

It is well known that stunting is rampant in India, over 50% of poor children can be classified as stunted (their heights are less than minus 2SD using the NCHS or WHO standards for height). Among the Scheduled Caste and Scheduled Tribe children, over 60% are stunted. Stunting is a sign of poor muscle mass, i.e., these children have less muscle and more fat when compared to normal children of the same age and weight group. In a modernizing country, heights are expected to increase in a secular fashion over generations. However, there has been a negligible or very minimal secular increase in heights of the poor over the last 50 years in India (less than 1 cm in the poor, the expected increase should have been 3 to 4 cm per decade, till heights plateau).

(See, Shatrugna V, Visweswara Rao K. Secular trends in the heights of women from the urban poor community of Hyderabad. *Ann Hum Biol* 1987; 14:375-7).

At least 14 tribes are losing height post independence. This despite the so called adequacy of protein intakes in over 70 to 80% of the population (see Gopalan and Kamala referred earlier). The rich however have been growing tall, and interestingly adult heights seem to increase as we go up the class ladder (Table-1a, 1b). It appears that milk and intakes of other animal proteins in the diet rich in calcium helps secular increase in height. It is known that the absolute amount of protein intakes is not important, but the percentage of good quality protein in the diet which contributes to height increase.

There are a large number of studies from India and the West which show that milk is essential for height increase during childhood, adolescence and pregnancy. Absence of milk in a child's diet results in stunting. In turn stunting is associated with diabetes and hypertension in adult life. In nutrition circles it is believed that a population's adult height may be used as a proxy for a nation's development.

Table 1a: Heights and Weights of Populations from 3 Socio-economic groups and from 4 centers in India

<u>Men</u>	Age (yrs)	Height (cm)	Weight (kg)	BMI
High Income Group	51.5	168.6	76.6	26.9
Middle Income Group	47.4	165.9	68.0	24.6
Low Income group	45.1	161.8	55.8	21.3

Table 1b:

<u>Women</u>	Age (yrs)	Height (cm)	Weight (kg)	BMI
High Income Group	50.1	154.7	67.3	28.1
Middle Income Group	45.8	151.8	59.6	25.9
Low Income group	44.3	149.7	52.2	23.2

Source: "Population based reference standards of Peak Bone Mineral Density of Indian males and females – and Assessment of Prevalence of Osteoporosis In Adult Population In India" - Reports of the ICMR Multi-Centre Task Force Study, New Delhi (2008)

*Veena Shatrugna (Hyderabad), A.C. Ammini, Nikhil Tandon, Ravinder Goswami, Nandita Gupta (New Delhi), Eesh Bhatia, Vijaylakshmi Bhatia (Lucknow), Rashmi Shah, Lalita Saverdekar (Mumbai).

To substantiate the importance of animal proteins for height increases in Indian children, studies quoted below show that addition of milk in the dietaries of children (normal or malnourished children) during the growing years (6 months to 18 years) resulted in height increase. Supplements of calcium alone had no effect on the heights of these children.

See references 1-5 given below.

- 1) On Milk supplements in NORMAL CHILDREN from the low middle classes subsisting on adequate calorie and protein.

Shatrugna, V. Balakrishna, N. Krishnaswamy, K. Effect of micronutrient supplement on health and nutritional status of schoolchildren: bone health and body composition, *Nutrition* 22 (2006) S33–S39

Abstract: This study was carried out in apparently normal children 6-16years of age who had adequate proteins and calories from a cereal pulse diet. However when they were given **additional milk (as a source of calcium) with adequate vitamins and minerals at half to one RDA for over 1 year** there was an increase in muscle mass, bone shell (height) and even whole body mineral content, when compared to control children.

- 2) Milk used as part of the rehabilitation diet in severely *undernourished children* - A hospital based study.

Radhakrishna, K.V., Kulkarni, B., et al Composition of weight gain during nutrition rehabilitation of

severely under nourished children in a hospital based study from India, *Asia Pac J Clin Nutr* 2010;19 (1):8-13.

Abstract: This was a hospital based study, where severely undernourished children were given a rehabilitation diet (cereal, pulse, eggs, milk, banana, bread, oil, vegetables etc.). The study demonstrates that it is possible to achieve rapid weight gain with recovery of lost muscle mass in severely malnourished children with this diet. Recovery is on par with international reported guidelines for nutrition rehabilitation with therapeutic diets like F-75 and F-100. Children with lowest Weight for Height Z scores (WHZ) at

baseline gained higher muscle mass during nutrition rehabilitation when compared to the children with relatively higher WHZ score probably in an attempt to recover the lost tissue. However cereal pulse diet without milk and eggs delays weight gain, and does not help height increase to the desirable extent. (See Reference 4 below, a review of all studies). (It would be unethical to do this study without milk and other animal proteins with the present state of knowledge)

- 3) Role of milk on adult height - analysis of the NFHS-3 data set.

Raja Sriswan Mamidi, Bharati Kulkarni, and Abhishek Singh. Secular trends in height in different states of India in relation to socioeconomic characteristics and dietary intakes. *Food and Nutrition Bulletin*, Vol. 32, No.1, 2011,

Abstract: The authors have analyzed the large data set from the NFHS-3 round and find that a higher socio-economic status was associated with greater height and a greater secular increase in height. Milk consumption had a positive association with height in men ($r = 0.69$, $p < .001$) and women ($r = 0.63$, $p < .001$) in various/ different states. Obviously these height increases happened during the growth phase (0-18 years)

- 4) Rehabilitation of undernourished children - review of NIN studies from 1950s to the present

Raja Sriswan Mamidi, Bharati Kulkarni, K.V. Radhakrishna. Hospital based nutrition rehabilitation

of children with severe acute malnutrition-experiences from a nutrition centre in India. *Nutritional Therapy & Metabolism*, 2011; 29 (3): 107-118

Abstract: This review is based on a series of studies carried out at NIN (from 1950 to 2011) and in line with the global evidence, the mainstay of management has been provision of adequate amounts of energy (about 150-200 kcal/kg/ day) and protein (4-6 g/kg/day) to achieve rapid catch-up growth during nutrition rehabilitation

The milk based diets were found to be effective in the recovery of the malnourished children, however considerable efforts were directed towards reducing the cost of the therapy by replacing milk with various foods (usually vegetable protein) as a protein source. Studies indicated that complete replacement of milk by vegetable protein led to suboptimal recovery.

5) On the absence of secular increases in heights of poor women

Shatrugna V, Visweswara Rao K. Secular trends in the heights of women from the urban poor community of Hyderabad. *Ann Hum Biol*, 1987; 14:375-7.

Abstract: This shows an absence of secular trends in heights of women from the low socio economic group.

Ref. No. 4 actually reviews the data on rehabilitation diets from 1950s onwards, and my essay "The Career of Hunger" under discussion here has also referred to findings of 1937 (Aykroyd, W.R. and B.G. Krishnan), the effect of skimmed milk, soya bean and other foods in supplementing typical Indian diets, *Ind J of Med. Res.*, 24). The action of milk can be explained by the presence of good quality protein and a growth factor called IgF1. Meat proteins are crucial for muscle mass, organ weights, serum proteins, haemoglobin synthesis, etc. Cereal, pulse proteins are inefficient for height increase, muscle mass and maybe even haemoglobin synthesis. (In India, anemia is prevalent in over 60- 70% of children, non- pregnant women, and even adult men, and in over 90% of women who are pregnant).

Therefore my response is: it's not possible to use a judicious mixture of vegetable foods like cereals and pulses if you want the child to reach its potential for height and for all the other functions of proteins.

International Reports

Further evidence for inclusion of milk for infants and young children-

In a position paper on Complementary Feeding in,

"A Commentary by the ESPGHAN Committee on Nutrition," the authors state that infants and young children receiving a vegetarian diet should receive a sufficient amount (500 mL) of breast milk or formula and dairy products. *Infants and young children should not be fed a vegan diet* (ESPGHAN Committee on Nutrition: Carlo Agostoni, Tamas Decsi, et al., *Journal of Pediatric Gastroenterology and Nutrition*, 46:99-110 # 2008). This guideline has been reproduced in UNICEF/WHO *Guidelines for Infant and Young Child Feeding*.

The WHO recommendation for infant and child feeding are as follows: (Feeding of non-breastfed children from 6 to 24 months of age in developing countries. WHO Technical Background Paper, *Food and Nutrition Bulletin*, 25, 2004).

NOTE the caution to be exercised if animal foods are not consumed daily or consumed in inadequate amounts, or not available.

- a. Animal milk, such as undiluted cow's milk must be given to children after 6 months of age, as it is a good source of several key nutrients. The amounts of milk needed daily range from 200 to 370 ml if other animal source foods are included in the diet and 300 to 500 ml daily if they are not.
- b. To meet nutrient needs, animal source foods other than milk are also needed. The daily amounts required are 50 g of egg (one egg) and 14 to 75g of meat, poultry, fish or chicken liver.
- c. If animal source foods are not available, deficiencies of zinc, iron and calcium are possible.
- d. Grain products, legumes, fruits and vegetables should also be included in the diet. If milk and other animal source foods are not consumed in adequate amounts, both grains and legumes should be consumed daily, if possible within the same meal, to ensure adequate protein quality.
- e. In general, one or two types of fruit and one to three types of vegetables per day can be recommended.
- f. If animal source foods are not consumed regularly, 10 to 20 g of added fats or oils are needed unless a fat-rich food is given.
- g. The number of meals required by non-breastfed children depends on the energy density of the local foods and the usual amounts consumed at each feed. When the energy density is at least 0.8 kcal/g and children are fed to satiety, 4 or 5 meals per day are needed (meals include milk-only feeds, other foods, and combinations of milk feeds and

other foods). *If the energy density or the amount of food per meal is low, more frequent meals may be required.* In all situations, responsive feeding practices that are sensitive to the child's hunger and satiety cues are advisable.

- h. The above recommendations assume that calories be derived from a large number of foods like milk, eggs, meat, poultry, fish, legumes, fruit, vegetables, fats, and fat rich foods like oilseeds (groundnuts, til, etc.)

Whatever the excuse (economic, cultural, vegetarianism, war sanctions, natural disasters, etc.), it would be unethical and dishonest to justify vegetable sources of proteins to infants and children because *"A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food."*

The references cited above shows that milk and other sources of animal proteins help infants and children (normal or malnourished, between the ages of 6months and 16 years) put on height, increase muscle mass and bone mineral, and enhance physical performance. (also NIN unpublished work)

Historical Mistake Corrected in the New RDA (2010)

The revised edition of the RDA (*Nutrient Requirements and Recommended Dietary Allowances for Indians.*, ICMR 2010), acknowledges the problem with the earlier mantra which had persisted with the recommendation that *"A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food"*, and makes amends for the dogma. It provides RDA of proteins by actually calculating requirements of essential amino acids instead of proteins, based on the Protein Digestibility Corrected Amino Acid Score (PDCASS) and arrives at a protein requirement of 60

gm on a cereal, pulse, and milk diet. (See *Nutrient requirements and Recommended Dietary Allowances for Indians*, ICMR, 2010, pp. 65-70). In this context over 500 ml of milk is advocated in pregnancy. (Cereals are deficient in the essential amino acid called lysine, and pulses are deficient in methionine).

Anant's Next Point

She does not give any rationale of why she thinks that it is wrong to point out that the problem of malnourishment in India is not primarily that of protein deficiency but of food deficit and that cheaper sources of proteins are available in vegetarian sources, their quality can approach that of the animal proteins with judicious mixture of cereals and pulses. This attempt to point out to the cheaper, vegetable sources of proteins is to be seen in the context of the Western lobby's attempt to sell then idea of protein concentrates to the Indian policy makers to overcome the malnourishment in India and to market protein concentrates in India.

My response: Of course the problem in India is massive food deficiency, that is both inadequate quantities and quality of food, and the solution is foods like cereals, pulses, eggs, milk, oil, vegetables, fruits, nuts, jaggery and other culturally preferred foods. On a largely cereal based diet there is a 600-700 kcal deficiency in the intakes of children from the low socio-economic groups (1-6 yrs) - see Table 2. It stands to reason that this 30-50% calorie deficiency cannot be addressed by cereals again or even with a cereal pulse ratio. These calories must come from foods which also provide other nutrients, like vitamins, minerals, etc., foods such as eggs, milk, banana, oil, greens, groundnuts, jiggery, etc.

Now let us see what does a child consume in India based on large scale surveys in India (NNMB 2006).

Comments: The apparently negligible protein gap (9%) does not reflect the quality of protein. The energy deficits in 1-3 year old children is about 42%

Table 2 RDA, Nutrient Intake, and Nutrient deficits in Boys and Girls 1-3 years

Intake & deficits	Protein (g)	Oils & fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.A (ug)	Ribo flavin (mg)	Vit.C (mg)	Folic acid (ug)
RDA	22	25.0	1240	400	12	400	0.7	30	30
Mean Intake	20.2	5.0	719	245	5.7	129	0.3	17	20.3
Deficit % def.	2.0 (9%)	20 (80%)	521 (42%)	155 (61%)	6.3 (52%)	271 (68%)	0.4 (57%)	13 (43%)	9.7 (32%)

(719 kcal intake vs RDA of 1240 kcal), fat deficits about 80%, Vitamin and mineral deficits are between 30-70%. It would seem from the table that providing the energy gap from cereals or cereal pulse is the contentious issue. However it should not be forgotten that there are crucial deficits in fats, vitamins and minerals necessary to satisfy the RDA for this age group. This implies that the broad calorie and other nutritional deficit should be bridged by more oil, eggs, milk, fruits and vegetables. This would also improve the quality of protein. If more of the same diet were provided, most of the calories and poor quality proteins would come from cereals, and only a little more than 6% of calories would come from fats (ideally 35-40% of calories must come from fats).

[For those who are interested, the table provides the following other information: Most of the calories and poor quality proteins come from cereals (75% Kcals, and 60% proteins), and only 6% of calories come from fats (ideally 35-40% of cal must come from fats). Oil intake is only 5g, and pulse intake 13gm (RDA for pulse is 35gm). Milk intake is only 80ml, (RDA 300 ml). The 30-70% deficiency in most vitamins and minerals in the diets is because the intake of most protective foods is less than 30% of RDA (85% deficit in Green Leafy Vegetables intake, 72% deficit in milk, intakes, there is a 70% deficit of even sugar intakes, the cheapest source of calories. To add to the irony there is no RDA for fruits, nuts, oilseeds, eggs, meat, fish etc.)]

In the present scenario of hunger and poverty among the poor children over 70% of calories come from cereals and from the little pulse consumed occasionally.

Therefore the additional calories must come from a variety of foods such as milk, oil, different kinds of cereals, pulse, egg, banana, potato, other fruits and vegetables, etc. because when calories are derived from diverse food sources, it assures adequate intakes of vitamins and minerals and other protective nutrients.

It maybe stated that calories sourced largely from cereals are responsible for the multiple vitamin and mineral deficiencies found in this age group of children. In the absence of vitamins and minerals, cereal carbohydrates are known to be stored as fat. The answer to this is not synthetic vitamins and minerals, but adequate amounts of fruits, vegetables, eggs, milk, nuts, fish, etc., in the ICDS diets. In fact the massive undernutrition in over 40-45% of children in India maybe traced to the pure cereal based diet (making them underweight and stunted see below).

In the paper quoted by you, Dr. Gopalan states that, “the prevailing emphasis on ‘the protein gap’ and ‘protein concentrates’ was wholly misplaced, and that the solution to the problem of PEM fortunately need not depend on imports of expensive protein rich concentrates, but rather could be achieved through proper use of inexpensive cereal-legume based diets, within the economic reach of poor families and within the country’s resources.”

The above Table-2 tells a different story, “...proper use of inexpensive cereal-legume based diets, within the economic reach of poor families and within the country’s resources...” has resulted in massive vitamin and mineral deficiencies, poor muscle mass, higher fat deposition and hypertriglyceridemia in Indian populations.

Elsewhere he has acknowledged that economic considerations were foremost in his mind and I quote “In devising cheap well balanced diets in India, economic considerations often preclude the inclusion of milk or other animal foods in adequate amounts... A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food.” (Gopalan, 1968:6-7) This quote is found even in the 2011 reprint of the *Nutritive Value of Indian Foods* (Gopalan, C et al, NIN, ICMR, Hyderabad, 1971, reprinted 13 times, last reprint in 2011).

Aykroyd as far back as the 1930s and 40s had said, “*In working out diet schedules, the requirement of protein, fat, vitamins and minerals should be considered and carbohydrate rich foods (cereals) can then be included in sufficient amounts to meet energy needs.*” (Aykroyd WR, 1937, ‘The Nutritive Value of Indian Foods and the Planning of Satisfactory Diets,’ Indian Res. Fund, *Health Bulletin*, No 23). It is significant that our colonial experts did not look for short cuts in the name of “economic considerations”.

Anant’s next point

Recommended Dietary Allowance (RDA) for proteins has been reduced by 30% (Patwardhan, 1960).

VS refers to a paper by Patwardhan which estimates the caloric requirement as 2770 calories for men. Here again, VS has not quoted any scientific evidence to challenge the new estimation done by Patwardhan et al of calorie/protein requirement of the Indian people. I have not accessed this paper published in 1960. But the publication - Nutritive Value of Indian Foods (by the National Institute of Nutrition, 1989 edition, reprinted 2007) gives in Annexure I, RDAs for

Indians. Here the caloric requirements for reference male (60 kg) are given as 2425 (sedentary), 2875 (moderate), 3800 (heavy work) calories respectively. The protein requirement is given as 60 gm for all the three categories. If VS thinks that these RDAs are unscientific, the scientific evidence in support of her belief should have been presented.

My Response

Without any reference to the quality of proteins or even the Biological Value of proteins (this knowledge was available even then) or the need for animal proteins emphasized by Aykroyd.(1937), Patwardhan slashes the protein requirements with the confidence that only experts from the elite backgrounds can have. He states "... people do not consume cereals or pulses alone to meet their requirements of protein, and hence there is little chance of deficiency of a particular essential amino acid setting in through a diet provided the total protein intake is adequate. Judicious combination of proteins from different sources will reduce the deficiency of the limiting amino acid which is otherwise present from a single source....", etc (Patwardhan, RDA 1960: 25). A little thought makes it obvious that the 'people' referred to in the report belong to a particular class and caste group; not many poor people were consuming rice and pulse proteins in the ratio of 4:1 in 1960. Patwardhan's recommendation of 60 gm of protein was based on the usual diets on the presumption that people do not eat only cereals. However, it should be clear that the poor eat an almost exclusive cereal diet and that too in inadequate quantity.

After 60 long years the ill effects of a high cereal diet on the heights and body composition of Indians has been acknowledged, and therefore, the latest RDA arrives at 60 gm of protein requirement, but it is based on Essential Amino Acid requirements or PDCAAS (Protein Digestibility Corrected Amino Acid Score). The RDA document states that "Based on turnover of amino acids using stable isotopes of Carbon (C-13) labeled amino acids have shown that the human essential amino acid requirements are 2-3 times higher than what was recommended earlier (WHO Technical Rep series 724, WHO Geneva, 1985). The new RDA therefore recommends 60 gm of protein per day based on a cereal, pulse and milk diet. (FAO/WHO/UNU Expert Consultation on Protein and Amino Acid Requirements in Human Nutrition: WHO Technical Report Series No 935, 2007).

This finding has been incorporated in the latest RDA (2010)

Anant's Next point

"Vegetarianism for the poor had been endorsed scientifically; and next step takes the country hurtling down a cereal trap."

I would point out that Gopalan et al were not at all arguing that only cereal-based diet is nutritionally adequate. Their argument was: adequate amount of cereal-pulse mixture in appropriate proportion would prevent both caloric and protein deficiency. Their argument was for cereal-pulse mixture and not for cereals alone as inferred by VS. If Indian economists and other policy makers while deciding poverty line or while deciding that only cereals would be given in the rationing system, have ignored/misused the nutritional requirements estimated by NIN scientists, we cannot blame the NIN scientists for this.

My Response

Dr. Gopalan talks about cereal pulse in the RDAs, but the studies based on which he proposes the grand 'Myth of protein gap', actually provide information about 'adequate protein' derived only from cereals for purposes of calculation. Gopalan confidently declares that there is adequate protein in the diet if only they ate "more of the same diet". Even Dr. Kamala (see extract below) has done this in her *mfc bulletin* paper. The important study you quote was also supplementing kids with empty calories. (A review by C. Gopalan, *The Contribution of Nutrition Research to the Control of Undernutrition: The Indian Experience*, Annual Review Nutrition, 1992, page 3) where Dr. Gopalan reports an interventional study of malnourished children where the calorie gap in these diets was bridged by supplementation with 300 kcal derived from ('empty calories'), ie., carbohydrate and fat sources (wheat flour, sugar, and edible oil) with little additional protein (not more than 3gm).

In the original paper quoted in the above review (Gopalan C, Swaminathan MC., et al., *American Journal of Clinical Nut.*, 1973, 26: pp. 563-566) he admits that "... the current home diets.... are deficient in a number of nutrients, particularly vitamin A, riboflavin, iron, possibly calcium." He advocates cheap sources of these (what are they?) and opens the floodgates for fortification and supplementation with chemicals.

You can't blame only the bureaucrats or Dandekar and Rath or M.S. Swaminathan when Dr. Gopalan himself said one thing (cereal/pulse) and researched something else (only cereal). (Also see KSJ's paper in *mfc bulletin* below.) Also, while I am speaking about Gopalan, I am in fact pointing to a scientific-

bureaucratic culture and mindset that weigh food for the poor against national economic interests and invariably give the former a low priority.

Let me quote Kamala S Jaya Rao (from *mfc bulletin*, April 1976): Indian diets are predominantly based on cereals mostly rice, wheat and jowar. *The popular belief that cereals are merely starchy foods is not true. They supply anywhere from 6-10% protein and are the main source of proteins in Indian dietaries. The 900 calories and 22 gm protein consumed by these children were therefore, derived mostly from a single cereal and very little dal. Suppose the child continued to receive only this Spartan diet, but in amounts to provide the required 1200 calories. The child would then receive about 86 gm more cereal and at least 5 gm extra protein. Thus the protein intake, without any special effort increases to 27-30 gm. Even accepting that cereal and pulse proteins are not as good as milk or egg protein, there will still be enough protein to meet the body's requirements.* In fact, children given a food supplement to provide 300 additional calories but only 3 gm extra protein were found to have an improvement in growth. (italics by VS)

About the Title of the Essay and Caste

When I talk about the culture of vegetarianism I am not talking about the personal eating habits or practices of individuals as you have assumed. I am referring to the hegemonic food culture in India, which is vegetarian, though this is now changing. In other words caste based food practices of the dominant elite were taken as normative. In fact in the sixties and seventies, caste and class domination was effortlessly unified.

As I have said earlier there is an elite vegetarianism, and a separate vegetarianism prescribed for the poor.

The culture and assumptions of science worked in tandem with other experts, planners, administrators, and political power. Not surprisingly nutrition science found its way easily to impact wages, agriculture policy, food security, and the idea of a national food culture, because of this shared culture/assumption.

Today we can see a disturbing similarity between the menu traditionally served by landlords to bonded labour, which consisted largely of rice gruel with chilly chutney, or roti with green chilies, and maybe onions, or variations of this (cereal) across the country on the one hand, and reluctance to move away from the cereal pulse norm on the other.

The rich and varied food practices of the majority, of eating small animals, birds, beef, insects, fowl, fruits, vegetables, etc. find no place in wage policy,

agriculture policy, defining poverty line, or nutrition science.

Caste Movements: Recent caste movements have drawn our attention to the problematic nature of the culture of vegetarianism, a food practice of the upper caste in India. The movements have pointed to the fact that our elite scientists, experts, bureaucrats, professionals, etc., are predominantly upper caste and practising vegetarians. It is a shock as one looks back into institutional history, how entire faculties in universities for instance were Brahmin (and sometimes only Tamil Brahmin and that too Iyengars!)

It should not surprise us today that they assumed that their culture was the right one for the nation (minus the almonds and curd).

Hunger: Returning to a serious note, what is hunger? Does it have a trajectory that exceeds calories? Looking at the size of a 35 kg weight woman worker at a construction site, or a 50 kg male agriculture labourer, it should be obvious that these weights are not acceptable as 'normal weights'. They are a result of hunger which our policies have either created or not addressed through wages, PDS, BPL classifications, or agriculture production, etc. We are talking of the trajectory of hunger in national life and nutrition science's formative contribution.

Let me end by saying that hunger is also for taste and pleasure and food cultures. Today stories and autobiographies by dalits teach us a lot about the dalit's hunger for meat!

Postscript

Dr Anant: Why and how did I start this project... there are 2 or 3 disturbing reasons. I was told by experts at NIN and Pune that you must not try to feed a woman who is 30-35 kg, even if her BMI is 17 or less, because the only thing she will end up doing is deposit fat ... because you cannot build muscle mass after your adult height has been reached, and the extra food (cereal) will form fat of course.

The second was Barker's hypothesis which states that if you are born small (birth weight of 30% of Indians is less than 2.5 kg) then you are a candidate for early onset of diabetes and hypertension.

If you take the first and second propositions together it looked like a hopeless situation.

It is known that muscle is the organ for glucose uptakes, insulin sensitivity, and glucose metabolism.

In my own work I found that height increase is directly related to increase in muscle mass (Kulkarni,

B, Shatrugna, V et al. Regional Body Composition of Indian Women from a Low-Income Group and its Association with Anthropometric Indices and Reproductive Events. *Ann Nutr Metab*, 2010;56:182–189.)

and secular changes in heights have occurred in the High Income Groups in India (see Table 1a and 1b). Next we carried out our studies which show that increased calcium intakes from milk with other vitamins and minerals helped height increases in children who had adequate calorie intakes (see references 1-4 given above). In addition, we were pleasantly surprised when children with severe grades of malnutrition were 'rehabilitated' with calories from milk, eggs, oil, rice, dal, banana, etc. had increase in weights but there was actual increase in muscle mass also at this age (<5 years of age).

It was obvious that if the children had received cereal pulse instead of milk, most of the weight increase would largely be composed of fat with minimal muscle mass. It is not surprising that, leading pediatricians and endocrinologists discourage child feeding at the ICDS centres for fear of increase in fat deposition. They have no time to look at quality of proteins required to increase heights and muscle mass, or they genuinely believe that the country cannot afford milk and eggs for its children.

The damage done by 'the myth of protein gap' dogma, has now a new avatar: if you do not feed early (by the first 1000 days, to prevent stunting) then it is better to keep the child starving, because the kid will accumulate fat mass with the cereal/pulse.

So why don't Indians grow tall and have a better muscle mass, and beat diabetes?

Why can't the 35 kg woman or the small baby be fed a diet which will improve their muscle mass? It was the job of researchers from India to work on these questions, we cannot expect the West to find solutions to our problems. People cannot be denied food because the scientists have not figured out a way of increasing the muscle mass of a 35 kg woman or the heights of small for date baby. None of the studies recommend changing over to a good quality protein, they assumed that the only food available was cereal and some pulse, even though scientists knew that a child needs food diversity, good quality proteins and calories must be derived from many foods.

Post-Postscript: Important to note that the New RDA (2010) states that you require animal foods for adequacy of Vitamin A, Riboflavin, folic acid, B12, and iron absorption also.

2. Comments from Chinu and Sridhar

From Chinu

Veena,

It has the contours of freedom vs hunger.

Cost is the factor in our current scenario. Therefore as public policy I see only cereals (and millets) and pulses satisfying hunger and protein needs - even this we are not doing inspite of grains rotting. Even milk is a costly source of protein.

To expect a public policy to think of meat, etc., is too visionary. However we do need to integrate organic and environmental concerns when we enlarge (or recover?) the menu. China has a problem of a large part of its fauna disappearing because they eat all types of meats.

Large scale production of meat means getting into capitalist trap of big food companies. And stray animals are increasingly disappearing.

As an aside, I think the Gopalans, etc., need to be evaluated as a product of their times rather than solely as a product of class/caste. One gets into motivations which is a guessing game unless you have access to their pvt thoughts - well you may have had access but I don't. At best - or worst - you can say they could have had Dalit and Muslim and NEast nutrition policy makers also if such were available. Then the standard RDI menu could have been different and more truly reflecting our complex palattal needs.

Chinu

From Sridhar

Veena, I agree with Chinu.

I also find the point about denying non-vegetarians a legitimate space not quite convincing ... apart from a 'cultural' no-no to public availability of beef in most parts of India (Kerala a notable exception), I have not found, in my travels to various nooks and corners, rural, tribal, urban - even in Gujarat and Rajasthan, the most Jain-Vaishnava influenced of them all - a problem with finding non-vegetarian food, or strong enough cultural hegemony of veg food to affect meat eaters: it is widely accepted that most non-brahmins/vaishyas do eat meats regularly. All along both coasts, especially the east coast, upper castes also eat fish - in Bengal it is consecrated by offering in worship. In Orissa, Chhattisgarh, Jharkhand, Bihar - easily the poorest among the states - fish and meat are widely

available and consumed. In many of these places, it is the pure vegetarian who finds it difficult to find food: my Jain and Vaishnava friends have a torrid time in the field. I see the 'Pure veg' eating joints as islands in a sea of unrestricted dietary practices. So, apart from the issue of beef, I am unable to understand the angst about dietary restrictions: I do not see who is denied the 'right to delight', except by paying capacity: and the poor are denied pulses and cereals as well - that is hunger.

The dietary diversity of the tribals, particularly, has been restricted not by RDA recommendations but by loss of forests of plenty as of old, when population pressures were much lower. Similar to what Chinu refers to as stray animals, it is so common not find small animals - squirrels, rabbits, even birds - in many of these 'forests', and the local people say it is because they have all been eaten. This is a tragic and complex situation, but surely entirely unrelated to RDAs from NIN.

As for cost of production, to whom does it matter? It would have mattered if production was really under state control and some kind of PDS actually provided for most people, which is the assumption when we debate the issue of cost. Today, people eat what they want when they are able to buy. The PDS accounts for a small fraction of what people eat, even the poorest: it is irrelevant to most except in the leanest season. The PDS grain is often used for fodder rather than food - at the first opportunity, people prefer to buy from the market or grow what they want. Most people subsist on what they earn in material, or in cash, and buy from the market - which provides according to demand. To the best that I can make out, this has been the story of rural India since time immemorial. Even at the heights of Nehruvian centralized planning, rural markets were largely free markets: the way weekly fairs were and are conducted even today is typical of rural India. With the exception of earlier war times, when the government commandeered commodities, has it ever happened that cash could not buy you what you wanted? And prices have varied by supply-demand dynamics. Today, per-capita milk availability is perhaps double or more that in the fifties, and I am not sure if prices are any different in real terms. If prices are still higher than we believe they should be, it just indicates how high the demand is. I guess the same applies to all high-value foods (other than pulses, whose production has come down for many reasons). So, a) though it is true that cost of production of animal proteins is far higher than veg protein, it does not really matter: the debate about costs of production is almost purely academic until we

have strong enough policies and programs to make a difference, and b) even if all hypotheses about an upper-caste/class driven pro-cereal policy making were true, I do not see what practical influence it has had or can have on the lives of ordinary people.

I guess the practical questions we need to quickly find answers to are, whether access to wholesome food will ever 'trickle down', and if not, how do we close the gap - in our times and contexts.

Sridhar

Veena's Response to Chinu and Sridhar

Well, Chinu cost cannot be the only factor, think of the subsidies given to the corporates, subsidies to the export sector, software sector and many, many more sectors tucked away in the reams of the budget papers.....This is a question of desires, tastes, and cultures of eating"The right to delight" with food which we take for granted but is denied to large sections of society in India, and interestingly this section comes from particular classes and castes.

But I am sure cost would also come down as it surfaces in the fact that we choose to go in for an agricultural policy of more grain and not a policy (as in say Denmark and other Scandinavian countries) of meat, milk, eggs in households and small farms.

Advocating meat, milk, fish etc. for the SC/ST, BCs and minorities in India leads to questions of environmental damage, and talk about the amount of grains which will go into making meat, etc. This politically correct position does not address the huge problem of hunger ... or the grains rotting in the FCI godowns.

It is well known that goats and cows in India provide the healthiest meats because these animals are not stall fed, and do not contribute to dietary cholesterol and other undesirable fats. This is so because they graze and live on household waste etc.....and their meat cannot be classified into red meat ... The propagators of organic foods might want to recognize and propagate traditional methods of rearing poultry, cattle, goats, fish, etc.

PS .About Sridhar's points- I think Srivats' write up addresses Sridhar's points....so I will refrain from elaborating any further.

Warmly,

Veena

Further Response on Email from Anant Phadke

Dec 13, 2012

Dear Veena,

Thanks for the detailed response to my criticism of your paper –“Career of Hunger”. In the file that I have uploaded (<http://filecloud.io/04sdhgcv>) I have given a detailed rejoinder to your points. In this uploaded file, I have inserted my comments as footnotes in red font in the text of your response. But since many e-forum members may not access the uploaded file, I have summarised below, my rejoinder to you.

Your somewhat lengthy response of about 12 pages does not undermine any of the specific points made in my critique of your paper –“Career of Hunger”.

I) As regards the *scientific aspect* of the issue, ***I had made two central points-***

1) Gopalan, Kamala Jaya Rao (GK) did not recommend only cereals but recommended judicious combination of cereals and pulses. They cannot be criticized for the rationing system in India not providing pulses to people or for policy makers talking about providing only cereals.

2) You did not provide any scientific evidence in your essay when you challenged the view of GK that *“A judicious mixture of vegetable foods like cereals and pulses can be cheap and at the same time can provide nearly as good an amino acid pattern as that of the costly animal food.”* I argued that taking these two points together, the criticism in your paper is not valid and is unfair. The title of the essay ‘Career of Hunger’ implies a criticism that these nutritionists on the one hand made a career out of people’s hunger and on the other hand were party to pushing Indian people into undernourishment. This criticism is unfair.

In your response, as regards my first point you have not brought forward any evidence to counter my criticism. You have not quoted any publication by NIN, or by Gopalan which recommended only cereals. Please note that GK did not advise ‘more of the same’, i.e., purely cereal based supplementation. This is despite the fact that in an interventional study of malnourished children it was found that even when the calorie gap in the diets of malnourished children was bridged by supplementation with 300 kcal derived from cereals and fat sources (wheat flour, sugar, and edible oil), the protein deficiency (which was 3 gm) was overcome. This study merely pointed out that protein deficiency was not the

primary problem; the primary problem was of food-deficit. This study itself cannot be the basis of the all recommendations about supplementary diet. Its significance was only for debunking the myth of the protein gap. In any case your criticism was that they recommended cereals alone. This is factually not correct.

As regards my second point, among the studies you have quoted, I think the fifth one is not directly relevant to our discussion about the comparison between vegetable and animal sources of proteins. Yes, other studies point out to the importance of animal source of proteins for gaining height and weight in children and adults. Actually that animal proteins are superior, was accepted/known even then. Yet GK argued for cereal-pulse mixture on the grounds that it provided “nearly as good an amino acid pattern” and on the grounds of political economy. Was there any evidence available in those days which invalidated this claim? If any study was available that showed animal proteins means much better height and weight achievement and if that was neglected by those who formulated the recommendations, then we can say that it was a historical mistake. Otherwise today it is simply a matter of improving recommendations in the light of new evidence that is now available. Had anybody shown that within the framework of the national, international political economy of food, in those days, it was possible to provide milk as supplement to all children in India and yet it was the narrow interests of the rulers which precluded this. Did any group of nutritionists or activists argued these positions then?

I think that you are *overstating the case for animal sources of proteins*. Though it is well known that animal proteins have higher biological value and hence are superior, it is a matter of degree. The biological value of various sources of proteins as given in the National Institute of Nutrition (NIN) book ‘Nutritive Value of Indian Foodstuff’ (1989 edition, page-4) is – Egg-96, milk- 90, meat -74, fish- 74, rice-80, wheat- 66, maize- 50, Bengal gram -74, red gram-72, ground nut-55, gingili-62. The biological value of appropriate cereal-pulse mixture is 80- 85. Given these facts even the recent edition of *Dietary Guidelines for Indians, a Manual*, published by NIN (2010 edition) says the following on page 13 under the heading ‘Proteins’ -

“Animal proteins are of high quality as they provide all the essential amino acids in right proportions, while plant or vegetable proteins are not of the same quality because of their low content of some of the essential amino acids. However, a combination of cereals, millets and pulses provides most of the amino acids, which complement each other to provide better quality ‘Proteins’.”

This manual under the section “How can the pregnant and lactating women meet these nutritional demands?” says the following on page 22 - “Good quality protein is derived from milk, fish, meat, poultry and eggs. However, a proper combination of cereals, pulses and nuts also provides adequate proteins.”

The point is that even though there has never been any doubt that animal proteins are superior, there is no need to overstate the case for animal sources of proteins.

In any case-how can one criticize recommendations made in the sixties and seventies by basing oneself on research findings published in the 21st century? If similar findings were available then, and yet if GK had ignored these, then they are open to criticism. Otherwise not.

You have given a table from *recent NNMB 2006 data* which gives the difference between the nutritional needs in various age groups versus actual consumption. This table does not invalidate GK recommendation. The 9% deficiency of proteins seen in this table can be certainly overcome with appropriate cereal-pulse mixture within the allowance of additional 500 calories needed to make up the caloric deficiency. (Not pure cereal-pulse mixture but addition of jaggery, oil is also needed to make up the calorie deficit. In children the caloric density of food has to be increased).

II) As regards the *ideological, political aspect of the debate*, you have claimed that “When I talk about the **culture of vegetarianism** I am not talking about the personal eating habits or practices of individuals as you have assumed.” But in the 7th para under the title ‘Planning of RDAs and elimination of proteins,’ you have stated “However the specific governmental solution arrived at clearly draws on a culture of vegetarianism common to the planners who thought on behalf of the nation.” Secondly you have missed that in the upper caste/brahminical culture, milk consumption is (mistakenly) considered as a good vegetarian practice. So if as you claim, the Brahmins

“assumed that their culture was the right one for the nation” they should have recommended milk for the poor.

Under the sub-title, ‘**Caste Movements**’ you have argued –

“Recent caste movements have drawn our attention to the problematic nature of the culture of vegetarianism, a food practice of the upper caste in India. The movements have pointed to the fact that our elite scientists, experts, bureaucrats, professionals, etc. are predominantly upper caste and practicing vegetarians. It is a shock as one looks back into institutional history, how entire faculties in universities for instance were Brahmin (and sometimes only Tamil Brahmin and that too Iyengars!). It should not surprise us today that they assumed that their culture was the right one for the nation (minus the almonds and curd).”

This argument smacks of sociological reductionism which criticizes policies of leaders merely on the basis of their sociological origins – male, upper caste, upper class, etc. While it may be insightful to examine the relation between the policy-maker’s/ leader’s own sociological background and the policies they advocate, it has become fashionable in certain quarters not to study empirical evidence but to merely quote some superficial observations and to draw conclusions mainly through sociological reductionism. Many a times the situation is complex, with its own contradictions. Some experts rise above their social roots and interests whereas some do it partially and some not at all. Many a times there is a mixture of science, ideology, personal interests and some personal qualities. All this needs to be explored concretely. We know examples of unscientific recommendations which are actually based on personal ideological positions but which are touted as ‘expert scientific recommendation’. However as we all know, to there can be no simplistic shortcuts to detailed analysis of the concrete reality.

Sincerely yours,

Anant Phadke

Further Response from Sridhar on email, Dec 25, 2012

Dear Veena,

I am not sure I will be in Hyderabad for the meet, so let me leave a few comments and questions for you and others to consider, in case the debate reopens there!

The point about how much superior animal proteins are to vegetable proteins – such as from an adequate cereal-pulse mix – is one of the key bases of your arguments. There are two contexts to this question – adequacy for therapeutic feeding of severely malnourished children and adequacy for normal diets for growing children and adults. We are mainly concerned about recommendations for the latter in this debate, so evidence from therapeutic feeding studies is not centrally relevant. While there is no doubt that milk/egg proteins are superior to cereal-alone proteins even for normal growth, the question to be addressed is whether the proteins in the RDAs of the 60s and 70s are (were) adequate, and what the difference is (was) likely to be between this and a diet having more proteins.

Whatever the consequent policy focus on cereals, let us remember that the RDA and the related model diets always included pulses and milk, even under assumptions of universal vegetarianism at some point. So, if we want to criticize the recommendations as grossly inadequate, we would need to show that an alternative RDA having more animal proteins is ‘far’ superior to this RDA. This case has not been convincingly made. Until then, are we justified in saying that the less expensive RDAs were inappropriate?

The next argument is that policy makers interpreted the RDA and the ‘myth’ paper(s) to mean that cereals is all that the poor needed, and that thus, the recommendations ‘sealed the fate of the poor’ and led the country into a nutrition trap. That assertion implies a dramatic change for the worse due to the recommendations, and begs a number of questions:

- Apart from the 30% reduction in protein allowances, based on some arguments - whatever the merits, did the recommendations themselves really change substantially over those decades?

- What did actually change after the recommendations, whether causally related or otherwise: Did availability of animal proteins worsen? Did the poor eat very differently from before to after the recommendations? Did PDS change for the worse in what it offered? Did the dietary diversity of the poor change – and if it did, was it a consequence of the recommendations? Did they really start eating more cereals than before, get cereal overload and fall prey to chronic disease? Did their children’s nutritional status worsen?

I am not sure any of this is true, so even if the recommendations were class-biased - which they

may well have been (but as Anant points out, one would need to show how) - it is difficult to see how the recommendations actually contributed to a ‘nutrition trap’.

But even if all of this were true, and a more assertive RDA had been prescribed, how would that have been translated into practice? When, in spite of greater resources and closer scrutiny, we are yet to actualize even the so called watered down version of the RDA today, is it fair to expect a more expensive RDA to have been implemented in the state of economy and thinking of the 60s and 70s, animal proteins and all?

It is a different matter altogether to suggest that the scientists could have been more assertive in fighting for better policies for the poor - which I agree they could have. But even there, merely recommending more proteins and fats would not have sufficed - or even been necessary. But about that some other day.

Anant has raised a number of relevant points, which I largely agree with, so I will not repeat them here.

Best regards,
Sridhar

Response to the Rejoinder of Anant of Dec 2012

-Veena Shatrugna

Just a few points, before I come to the specifics. A major concern in India is the rampant prevalence of the Metabolic Syndrome, marked by obesity, diabetes and dyslipidemia, and possibly leading to BP. The beginnings of this may be traced to the very poor diets of the mothers during pregnancy (cereal and some pulse, see NNMB data on diet intakes). As a result the foetus, grows in an atmosphere of scarcity, with most of its organ, functions and metabolisms shrunk/compromised. These newborns as infants and children do not thrive because of continued environment of poverty and a near absence of good food like milk, eggs, nuts, etc., keeping them stunted and underweight, with a poor muscle mass. When these children grow up to be adults, their bodies and metabolisms are ill-equipped to deal with any excess nutrition in their adult life.

These so called stunted populations are of course from the poorest strata of society (Dalits, other castes who do heavy work as carpenters, agriculture labour, cobblers, stone breakers, toddy tappers, metal workers, iron smiths, and many more!). When they

give up their usually heavy work, and migrate to the cities, but continue with this famous cereal pulse (NIN) diet devoid of all vitamins and minerals, you find that they succumb to diabetes and metabolic syndrome.

It is now almost certain that vitamin B12, and amino acids like methionine, and other nutrients like folic acid largely derived from animal foods and milk are necessary for maintaining methyl transfers and preventing the metabolic syndrome described by Barker.

But of course the nutritionists of the 50s and 60s did not know about the "Barker's Hypothesis", but they were fiercely nationalists and believed in maintaining "our" traditions at any cost. The fact that over 80% of the population enjoyed animal sources of foods, did not clearly conform to their idea of 'tradition'.

1) Cereal Pulse Combination

Anant: Gopalan, Kamala Jaya Rao (GK) did not recommend only cereals but recommended judicious combination of cereals and pulses. They cannot be criticized for the rationing system in India not providing pulses to people or for policy makers talking about providing only cereals.

My Response- When scientists are vested with the power to make recommendations for a nation, they must take the responsibility of framing it in the context of people's lives, and intervene from time to time, when there are signs of deviations as in the case of rationing only cereals, or wages based only on cheapest source of calories. Even to say that they recommended cereal and pulse is problematic, because this cereal pulse had to be eaten in a ratio of 4:1 or some such ratio AT EACH MEAL for protein to come anywhere close to the desired amino acid pattern of animal proteins. A scientist cannot abdicate this responsibility....CANNOT !

By keeping out animal proteins from the recommendations they play God, in fact they conjure up a vegetarian diet, as the source of all calories (and proteins) despite the fact that such a diet is alien to large masses of people. There is no evidence that they followed it up with nutrition education, about the need to eat 4:1 cereal pulse ratio among the meat eating castes and class in India.

When bureaucrats further corrupt this diet with cereal as the only source of calories, the scientists do not bring it to the notice of planners or raise any objections. After all NIN was the only institute which was consulted by the GOI on all matters

concerning food and nutrition, the scientists should have exercised the power they had.

Dr. Gopalan could have made a lasting impact if only he cared to study the preferred eating patterns of the poor, instead he was keen on making a mark in the international arena, with his "Myth of Protein Gap." Dr. Gopalan took the scientific world by storm,it had such a powerful impact on the world bodies like FAO and WHO, Nutritionists from Africa, Asia, and other ex- colonies were in awe of him. Remember he calculated the proteins available only in cereals (6-10%), and arrived at this grand hypothesis. (See extract from Kamla's paper in *mfc bulletin* given below). As a result Dr. Gopalan had lost the right to say, BUT, but, but, wait, proteins must be derived from cereal pulse combination in a ratio at each meal...! Such a statement would have been an anti-climax.

Kamala S Jaya Rao (See *mfc bulletin*, April 1976): Indian diets are predominantly based on cereals mostly rice, wheat and jowar. *The popular belief that cereals are merely starchy foods is not true. They supply anywhere from 6-10% protein and are the main source of proteins in Indian dietaries. The 900 calories and 22 gm protein consumed by these children were therefore, derived mostly from a single cereal and very little dal. Suppose the child continued to receive only this Spartan diet, but in amounts to provide the required 1200 calories. The child would then receive about 86 gm more cereal and at least 5 gm extra protein. Thus the protein intake, without any special effort increases to 27-30 gm. Even accepting that cereal and pulse proteins are not as good as milk or egg protein, there will still be enough protein to meet the body's requirements. In fact, children given a food supplement to provide 300 additional calories but only 3 gm extra protein were found to have an improvement in growth.* (italics mine - VS)

Please remember the drama in all this, when the west watched Indians make arithmetic calculations to save the country the ignominy of importing milk powder for the children.

2) Title of the Essay: 'Career of Hunger'

Anant: The title of the essay 'Career of Hunger' implies a criticism that these nutritionists on the one hand made a career out of people's hunger and on the other hand were party to pushing Indian people into undernourishment.

My Response: Actually I am happy that the title disturbs and even hurts, it is a small effort to map

hunger, in the sciences, in the simple-minded world inhabited by scientists, in the framing of diets, wages, green revolution poverty line... my write up tries to locate and dredge it out, from the various locations and meanings of hunger .

3) Importance of Animal Proteins

Anant: Actually that animal proteins are superior, was accepted/known even then. Yet GK argued for cereal-pulse mixture on the grounds that it provided "nearly as good an amino acid pattern" and on the grounds of political economy. Was there any evidence available in those days which invalidated this claim? If any study was available that showed animal proteins means much better height and weight achievement and if that was neglected by those who formulated the recommendations, then we can say that it was a historical mistake.

My Response: There was ample evidence and I have it in my paper, but maybe it should be reproduced from "Careers of Hunger" Section II, Pg 17, (also see references, Aykroyd and Krishnan 1937; Someshwar Rao, 1961).

"By 1955 it was clear that whatever the sources of vegetable proteins, when they were compared to milk protein in trials feeding sick or undernourished children, it was obvious that milk protein was far superior.

"In a paper titled Treatment of Nutritional Oedema Syndrome (Kwashiorkor) with Vegetable Protein". (Venkatachalam, et.al., 1956), based on experiments comparing skimmed milk protein and vegetarian substitutes, this paper argued that, though skim milk protein may be unsurpassed in its biological value in treatment of Kwashiorkor, underdeveloped countries could not use it as a basis for large-scale solutions. In spite of superior efficacy of the skim milk protein when evaluated by the two biochemical criteria adopted for assessing satisfactory recovery: the rise in serum proteins and albumin, the authors concluded, "the 'slight inferiority' of vegetable proteins, should not obscure the fact that remarkable clinical improvement almost as striking as with skim milk was noticeable in cases treated with these diets."

Actually this conclusion of the 'slight inferiority' of vegetable proteins, was at variance with the text of the paper, shall we call this unethical reporting in today's world. (We do not forgive drug companies when they do this.)

4) About the biological value of various sources of proteins as given in the National Institute of Nutrition book 'Nutritive Value of Indian Foodstuff' (1989 edition, page 4): It is important to remember that Biological value is an index. It is not an end in itself. How the index works in vivo, and what it points to in the body needs corroboration.

5) About Criticism

Anant: In any case-how can one criticize recommendations made in the sixties and seventies by basing oneself on research findings published in the 21st century? If similar findings were available then, and yet if GK had ignored these, then they are open to criticism. Otherwise not.

My Response: Criticizing past history is part of going forward. In Marxism, one criticizes the ruling classes in order to bring in a new order. In feminism, one criticizes even the well-meaning, on the charge of patriarchy. Anant, some even criticize nuclear power on the charge of damage, even if it is meant to provide electric power to the people.

6) Anant: This argument smacks of sociological reductionism which criticizes policies of leaders merely on the basis of their sociological origins – male, upper caste, upper class etc

My Response: In the first place I did not criticize Nutritionist Researchers in my paper. This is Anant's reading and I would like to place my objection on record. My paper is a reading of the history of nutrition research, and some people do crop up, and they are predominantly from a particular class and caste and this was not an accident. Even pedagogy has been controlled by a handful from a particular class and caste, The need for reservations stems from this experience.

Most institutions and disciplines in India have been forced to address this problem, whether it is Law, Health, Education, Media, History, Economics, Agriculture, Police. Did we not ask for gender-just laws, or Health from a feminist perspective, representation of women in the media, and the limitations of the History of Kings and rulers, I can go on and on Anant. The Black Movements are another parallel. So why are we afraid of caste? Please do look at Dalit aspirations... which go beyond cartoons of Ambedkar.

Regards,

Veena Shatrugna

The Culture, Politics and Economics of Vegetarianism

- R. Srivatsan

Reading some of the positions on the debate on Veena's essay, I feel there are two or three subtle issues to be taken into consideration.

Firstly, let us look at the economics of production of meat versus cereal. Now it seems clear that the rice/wheat production costs are the lowest in our situation. Thus, we think that cereal production is the only economic choice. My argument is that this is so not because of natural market forces, but because of economy wide governmental intervention over the past five decades. These can be listed as follows: A) the Public Distribution System purchases grain from the farmers each season. B) Minimum Support Price is guaranteed to farmers to ensure production of these crops. C) The railways have rolling stock designed to ensure that the grain is carried away in a reasonable condition. D) The Food Corporation of India has granaries that can store several thousand tons of grain for future distribution. E) Each state has grain agencies that purchase grain from the farmer over and above the FCI purchases. F) There is a core sector industry which ensures availability of fertilizers and pesticides for these grain. G) The history of the High Yielding Variety of wheat and rice grain that is part of the Green Revolution. Thus, rice and wheat are kept cheap and with an assured purchase by an extensive system of subsidies and enablements. The proof of this is that today, rice is grown in semi-arid areas of Andhra Pradesh where historical experience had shown millets to be more economical and ecologically sound in terms of water conservation. There is an overwhelming dominance of rice production depending on this support economics that discourages diversion of resources to the production of other grain. This economic logic affects what is consumed by the population of marginal and small farmers in the country. The reduction of dietary diversity is related to this governmental monopoly support of rice/wheat.

Therefore, would the production of meat/beef be cheap? My argument is yes, if an artificial economics of meat/beef production were created to the scale of what it is with grain, replacing the existing grain production system, it would be possible. This would be so simply because, as with the existing example of rice in Andhra Pradesh where comparison with the economics and ecology of millet production in semi-arid areas is rarely raised, we simply would not compare meat production with rice production at all. The question is of governmental will and mainstream culture.

Secondly, how is governmental will to be changed? This is related to the issue of mainstream culture and the discourse on what is healthy, good food. Today, vegetarianism is fully supported in the public domain as the healthiest choice. Whatever the truth of this in an obese American culture, in our conditions, this is simply wrong. A large population of the country needs meat (non-vegetarian protein) to ensure health. It is absolutely essential to challenge the discourse of

vegetarianism to contest this dominant-caste mindset of vegetarianism. For an example of this mindset, let us look at the way the brahminical insistence on vegetarian food is so respected (I would say pandered to) by Indian non-vegetarians who take great pains to provide 'pure' vegetarian food for their honored guests. Would the vegetarian host ever dream of providing meat regularly if a non-vegetarian said that he could only eat if meat were served at every meal? No, we vegetarians simply assume that vegetarianism is a sub-set of non-vegetarianism and subject the habitual non-vegetarian to a vegetarian diet. We simply do not think of how much inconvenience a non-vegetarian is subjected to when fed a vegetarian diet.

The broader importance of all this can be gauged with the kinds of cultural opposition non-vegetarian food has. When we hear of dalits being massacred because they slaughtered a 'cow' (i.e., cattle – which could be an ox, a cow or a buffalo), we find it sad, but never shocking or appalling to our sensibilities. But for what earthly reason should people be killed because of what they eat? When Muslims prepare for Bakrid, they have to literally gear themselves for opposition from the cow protectors, who not only police beef sale with a violent militia, but also casts an eye on sheep sales. In Karnataka, Madhya Pradesh and Rajasthan (all BJP ruled states) there has been a fierce and disastrously successful campaign by the ruling party to stop the government from providing eggs for children in the school lunch program. Even children eating eggs for much needed protein is objectionable to these gatekeepers of food culture! In Delhi, when the JNU recently tried to organize a beef festival, the High Court ruled that it shouldn't be permitted in the interests of security. A similar attempt at the EFL U in Hyderabad resulted in a brawl followed by a police intervention. Such instances have lost their sense of strangeness and polemical excess because of the regularity with which they occur. Why should the law or police even have to bother about what we eat? It is because of the completely outrageous ruckus caused by vegetarians (those militants among us who protect the faith).

The argument about cereal being cheaper is an incorrect one to use in the context of a struggle to change culture. Also, to put things in perspective, it is not as if the whole population will shift to a beef diet in the unlikely event of a governmental support structure for beef production. A small, crucial population will begin eating beef, with a penumbra of others. This may not dent the economy so much. But the important thing is, talking about beef and meat production will open the governmental imagination to a broader palate. We will begin to consider possibilities that were not even on the horizon of policy consideration till recently – and people will be the healthier for it. This battle is on, and needs to be fought with all resources.

What follows is an essay by a Dalit scholar on the struggle to assert a beef eating culture in the public sphere on the University of Hyderabad Campus.

Democratization of the Public Sphere

- Sambaiah Gundimeda*

Within the caste-based Hindu society, a food hierarchy goes from vegetarianism (at the top), to meat-eating (involving no beef) to beef eating. In *Origin of Untouchability* (1916), Ambedkar drew attention to these two taboos and the socio-cultural codes they carry with them:

There is one taboo against meat-eating. It divides Hindus into vegetarians and flesh-eaters. There is another taboo against beef-eating. It divides Hindus into those who eat cow's flesh and those who do not [...]

Interestingly, this food hierarchy is not built upon brahminical notions of caste. It is constructed on a matrix comprising the superiority of non-violence, a conception of the graded hierarchy of living things, and most importantly a belief in the sacredness of the cow. In modern India, this matrix was shaped by none other than Mahatma Gandhi, a Hindu to the core [...]

In this discourse cow slaughter and beef eating become unnecessary and immoral acts. However, in practice the food hierarchy is far messier, especially when it comes to what specific castes and communities actually eat and what they are supposed to eat. For instance, brahmins of all sub-castes in Bengal and saraswat brahmins in the coastal regions of Karnataka eat fish. Several communities in the middle of the caste hierarchy, such as vaishyas and lingayats, are vegetarians [...]

The effects of the caste Hindu discourse on beef consumption, especially upon dalits, are appalling. In everyday social relations they are made vulnerable to humiliating treatment. Following the rise of Hindu fundamentalist forces, on several occasions dalits have been lynched by caste Hindus, allegedly after killing a cow. Dalits are forced to consume beef stealthily, far from the gaze of the caste Hindu public. This, however, does not mean that dalits accept their subordination. They are engaged in an intellectual critique of the food hierarchy as well as symbolic acts of consumption of beef in public so as to dispel the stigma attached to it [...]

The Demand for a Beef-Stall

Setting up the beef stall at Hyderabad Central University's Sukoon Festival was an attempt to tease out and highlight this stigmatizing treatment.

Towards the end of each academic year the university student union, which represents the whole student body, organizes a three-day cultural festival called Sukoon. A number of competitions are held for students, and there are quizzes, plays, debates, music, and sports. In the evenings they relax in an open theatre where different bands play for them. Along with the competitions, students and others open stalls selling books, clothes and food. The food served in these stalls is mostly vegetarian. Meat is also served, but it is generally confined to chicken dishes.

Festivals are special occasions, and on such occasions people enjoy food associated with their cultural background. As the name Central University suggests, students as well as teaching and non-teaching staff come from all over India and have diverse cultures and varied food habits. For instance, dalits (at least South Indian dalits) prefer beef to other varieties of food. Similarly, Muslims enjoy mutton biriyani, and students from an adivasi background as well as from the north-eastern states favour pork. In this context an exclusive preference for a particular variety of food identified with a specific culture is a marker of the hegemony of a specific culture over the plural cultural terrain of the campus.

A few months before the Sukoon Festival in 2006, the Dalit Student's Union challenged this hegemony. They argued that the food in the stalls did not represent the cultural diversity of the university community, and was simply another manifestation of the hegemony of the upper castes and their culture. The university, as a public institution should not allow its public space to be colonized by a particular culture, but should ensure that the space is shared equally by every culture of the university community. As a step towards equality in representation, the DSU demanded that it should be allowed to set up a beef stall in the Sukoon Festival, as beef constitutes an important part of the food habits of dalits and is thus part and parcel of dalit culture and that such food culture is equally shared by Muslims and a few others from caste Hindu cultural backgrounds.

* Sambaiah Gundimeda, <samgundimeda@gmail.com>, is a political sociologist with a doctorate from SOAS, London. He is passionate about the idea of democracy, and his work concentrates on understanding the demands of the marginalized for social justice, their claims for a just distribution of political power, dignity and respect. His book manuscript entitled 'Mapping Dalit Politics in Contemporary India: A Study of UP and AP from an Ambedkarite Perspective' has been accepted by Routledge. Currently Gundimeda is an Assistant Professor at Council for Social Development- Southern Regional Centre, Hyderabad.

The administration, the executive body of the university, was 'irritated' by this request and instantly denied permission for the stall on the grounds that 'consumption of beef (on the campus) creates caste and communal tensions'.

The administration's refusal was taken as a rejection of dalit culture by the DSU. It organized protests against the decision and led an indefatigable campaign among the students. Its efforts divided students into two diametrically opposed groups, one supporting the stall and the other opposing it. Many student organizations supported the DSU. The only organization that opposed it was the Akhil Bharatiya Vidyarthi Parishad (ABVP), the student organization attached to the Bharatiya Janata Party.

As it happened, in 2006 the university student union was under the leadership of the Marxist Student Federation of India (SFI), a key supporter of the promotion of dalit culture. Disregarding the decision of the University, the President of the Student Union allowed the DSU to set up a beef stall in the festival. The opening of the stall generated great euphoria as well as despair in the campus. Dalits and other supporters of the stall celebrated the occasion by shouting slogans in praise of Babasaheb Ambedkar, clapping, dancing to the energizing rhythms of the madiga dappu, congratulating each other on their triumph and relishing the taste of beef. The ABVP however, bemoaned the installation as 'the tragedy of the campus' and 'a calamity for Indian culture'. Further, it organized noisy protests against the stall and demanded that the administration should remove the stall, since 'beef eating is against Indian culture and against the sentiments of [the] majority students'.

The administration, as if waiting for this response, hurried to the stall and demanded that the DSU close it down at once, alleging damage to 'order' on the campus. The DSU and other supporting organizations, especially the SFI and the Ambedkar Students Union (ASU), stood firm and argued that the food habits of the dalits are different from those of the (caste) Hindus and this difference should be represented in the food served in the Sukoon Festival. The administration, both on account of the logic of the reasoning and the support rendered to the stall by a majority of the students, appeared to come to its senses. Taking cognizance of the prevailing local as well as national laws on the issue of beef consumption, it officially issued a letter of permission to the DSU for the beef stall.

Claiming Human Agency

The Dalit Students Union, by setting up a beef stall in the public space of the university, was not merely challenging the domination of Hindu culture, but also opening up the public space for other marginalized communities and cultures to enter that space. The Dalit Students Union was not only realizing citizenship rights accorded by the Constitution, but also protecting the law itself from the exclusionary claims of caste Hindu culture.

The rejection faced by the Dalit students is not only humiliating but also injures their humanity. According to Sanjay Palshikar (2005: 5428): "To be humiliated is to be rendered inferior or deficient in some respect by others in a deliberate and destructive way. It is therefore a deeply distressing experience. It is something one cannot get over easily, and those who have to face it everyday sense a constant threat to their sense of self-worth". ¹Margalit (1996: 109) writes that to humiliate is to treat a human being as nonhuman. ²This treatment is an injury to their very humanity. One of the ways of doing so is to consider some of their physical characteristics as a sign of a deficiency in their humanity. For instance, caste Hindus may regard the dalit drum (*dappu*) as inferior or stigmatizing as also their food, particularly beef, depicting them as deviant and as severely flawed human beings or as subhuman.

The key question is how do the humiliated retrieve their humanity? To the three possible responses suggested by Palshikar (2005: 5431) revenge, retribution and forgiveness, let me add two more - restricting or avoiding those practices, and the converse, asserting them as positive and taking pride in the practices.

To begin with, if taking revenge against the humiliator implies reciprocating humiliation, how can this be achieved? Since dalits are humiliated on account of their beef consumption, reciprocating this would require humiliating caste Hindus on account of their food habits as well as their ways of life. Some remarks made by dalits and other lower castes against brahmins and other upper caste Hindus suggest that this has happened. For instance, one finds Telugu expressions such as *pappugaallu* (lentil fellows), *jandhyamgallu* or *threaddugallu* (thread fellows, a reference to the sacred thread) and *sinthapandugallu* (tamarind fellows, referring to Vaishya castes as well as their complexion). These terms are used not only by dalits but also by other upper castes. However these 'insults' are relatively ineffective, for two reasons: Firstly, lentils or the sacred thread, unlike

beef, carry a positive social value on account of their consumption by the upper castes. Secondly, caste-Hindus have enough social confidence to ignore these jibes.

But, isn't the idea of revenge silly, as Chakrabarti (2005) described?³ One, the avenger cannot 'get even' with the original attacker. Second, revenge always escalates violence, never puts it to rest and third it also connotes moral and strategic defeat, not a display of victory or power. If revenge is not the way out, what are the victims supposed to do with the haunting memories of past sufferings inflicted by others and the toxic resentment that this generates? His advice to 'remember' and 'resist', although morally sound, seems unviable for two reasons. First, asking a victim to remember an act of violence or humiliation is a way of leaving the victim in permanent mental agony. The victim is doubly victimized, first on account of the humiliating treatment itself, secondly on account of retaining such treatment in memory. Second, the idea of 'resistance' implies continuation of the problem. The solution to a problem is annihilation rather than temporary solace. By resisting one is at best pushing the problem aside rather than eliminating it on a permanent basis.

Retribution as a response to humiliation is problematic too. Firstly, violence, causing destruction either human or material, is a regression of civilisation. Secondly, though the population size of each individual caste is no greater than any other individual caste within the social hierarchy of India, there is a massive gap when castes join into larger social categories. The combined population strength of the caste Hindus is between 65 to 70 per cent of the total population of India, while the combined strength of the Dalit population is between 22 and 24 per cent. But it is not just a question of numbers. Caste Hindus are better equipped in other ways too and in the event of violent retaliation, dalits would obviously suffer more than others. Thirdly, resorting to violence suggests that parties involved in violence have lost trust and faith in each other.

Palshikar notes that forgiveness commonly requires a change of heart and requires that the victimizer repent his wrongdoing. I remain sceptical about forgiving as a response in a caste-based society. One of the pillars of Hindu caste society is the theory of karma, which suggests that the birth of individuals into various castes in the hierarchy occurs on account of their deeds in their previous life. This means that the present positions of upper caste and lower caste are a consequence of their earlier good deeds or bad

deeds. It is possible that, shaped by karma theory, caste Hindus believe that their attitude and behaviour, including violence and humiliation against dalits, is not only a way of reaping the benefits of their good deeds in previous lives, but also a way of punishing dalits for their bad deeds in the past. Shaped in such an ideological environment, the question arises whether caste Hindus can ever repent the violence or humiliation they inflict on dalits [...]

Since none of the above responses to humiliation seem suitable, let me discuss the two other possibilities that I proposed earlier: one, to avoid those practices at the root of the humiliating treatment, or to affirm those practices as positive and take pride in them. The first option would require dalits to give up beef, assuming that people are willing to sacrifice anything to avoid humiliation. While it is true that dalits are humiliated on account of beef consumption, relinquishing this practice will not, by itself, guarantee them human treatment. We have several instances on record where dalits have continued to be humiliated by caste Hindus despite strict adherence to vegetarian food. Giving up beef to avoid humiliation can itself constitute an act of humiliation, not inflicted by others, but self-inflicted. Taking an action that goes against one's interest and strengthens the power of others over one is damaging to one's self-respect and is a self-inflicted humiliation.

The second course of action, positively affirming the practices denigrated by others and taking pride in them, appears to be the best course of action. It shows that the practitioners value this practice. Although dalits are not ashamed of beef eating and in fact relish its taste, they are made to feel ashamed of their food when they encounter caste Hindus, whose social norms prohibit beef consumption. The installation of the beef stall in the public space by the Dalit Students Union can be interpreted not only as an assertion of positivity and pride in their food practice, but also an invitation to caste Hindus to taste this food and re-evaluate their perception of it. In this case, the victims are not acting on the wishes of the humiliator, but on their own terms, and thus claim agency for themselves, inviting others to accept, or at least re-assess, the value of the denigrated action.

Endnotes

¹ Palshikar, Sanjay (2005) 'Understanding Humiliation'. *Economic and Political Weekly*, 40(51): 5428 – 32.

² Margalit, Avishai (1996) (Tr. by Naomi Goldblum). *The Decent Society*. Cambridge: Harvard University Press.

³ Chakrabarti, Arindam (2005) 'The Moral Psychology of Revenge'. *Journal of Human Values*, 11(1): 31-6.

Health Status and Health Seeking Behaviour of Waste-Pickers in the Municipal Dump Yard in Chennai

- Sneha A., Dr. Rajan Patil¹

Introduction

In urban India every year about 55 million tonnes of municipal solid waste is generated with an estimate of 5% increase yearly.[1] Waste-pickers all over the world make a living by collecting, recycling and selling the material which others have cast aside as waste, they sometimes use these material for their personal use also.[2]. In India the estimated number of waste-pickers is 1.5 million. Threats due to handling of waste without using any protection are usually from disease causing pathogens, sharp objects, smoke from burning of garbage which causes respiratory problems, and disease causing vectors like rodents and mosquitoes. Most of the waste-pickers comprise of women and children. According to a study done in Bangalore in India on child waste pickers, it was reported that 45% of child waste-pickers were suffering from worm infestation followed by 23% suffering from respiratory tract infection; other problems being scabies(3%), dental caries(13%) and lymph node enlargement(18%). The possible reasons were stated to be ingestion of contaminated food, unhygienic home environment, overcrowding and lower immunity owing to poor nutrition.[3] The dump yard in Chennai supports approximately 200 waste picker families. It is estimated that India's capital, New Delhi, alone shelters 80,000 waste pickers. In a study conducted in Delhi among 98 waste-pickers and 60 controls, medical examination was conducted. It was reported that among the non-smokers of the study population and controls, the prevalence of respiratory symptoms was 94% and 56% respectively. Unhealthy gums, frequent episodes of diarrhoea, dermatitis, cuts and pricks were predominant morbidities among the waste pickers.[4] Waste-pickers are often subjected to harassments and are treated as nuisance by the authorities and the locals on account of which they frequently suffer low self- esteem. [2] Children are more susceptible than adults to these harassments

and as a result there is poor personality development. In a study in Brazil in 2004 about 990 waste-pickers were interviewed to estimate the prevalence of Minor Psychiatric Disorders (MPD) which was estimated to be 44.7% compared to 33.6% among non waste-pickers. It was also reported that being a waste-picker had 20% higher prevalence of minor psychiatric disorders. Unemployment, Static posture, job satisfaction and work accidents were associated with MPD.[5]

Hence, the objective of this study was to identify the physical and the mental health problems of waste-pickers working in a dump yard and also to assess their treatment seeking behaviour.

Methodology

A descriptive cross-sectional study was done among waste-pickers working in a dump yard in Chennai. The respondents were chosen on a convenient sampling frame. The sample size was calculated to be 156, but due to poor access to the respondents only 145 were interviewed. The minimum age limit of the respondent was considered as 15 years. The structured questionnaire comprised of demographic profile, physical health problems, mental health problems and treatment seeking behaviour of the respondents. Mental health problem was identified using the self reporting questionnaire 20 (SRQ20).[6] Treatment seeking behaviour questionnaire was adopted from the ACT Consortium guidance on collecting household costs.[7] An informed consent was taken from the respondents. Measures of association, the Fisher exact test, were used for analysis, with p value <0.05 considered significant.

Results

Description of the study population

The study population consisted of 53% female and 47% male. The median age was 36 years. Among the study population 73.8%

¹Email for correspondence: iyers3012@gmail.com

had no formal education. Average family size was five and the average monthly income of the respondents was Rs 5,600. Protective gears were used by 70.3% while working.

Physical health problems

Physical health problems were reported by 91.7% (133) of the respondents. Among them 21.4% reported symptoms suggestive of skin problems, 39.3% gastro-intestinal problems 60.4% respiratory problems, 72.4% body ache, and 38.6% injuries. Respondents less than 36 years of age had 3.5 times greater odds of developing physical health problems when compared to respondents more than 36 years. (Fisher exact value (p): 0.05, OR: 3.541, 95% CI: 0.918 – 13.665). Females had 2.5 times greater odds of developing body aches when compared to males (Fisher exact value(p): 0.02, OR: 0.416, 95% CI: 0.197 – 0.880). Males had 2 times odds of getting injured when compared to their females counterparts (Fisher exact value (p): 0.02, OR: 2.21, 95% CI: 1.120 – 4.376). Respondents who were never married had 2 times greater odds of getting injured when compared to the ever married (Fisher exact value (p): 0.05, OR: 2.33, 95% CI: 1.024 – 5.341).

Mental Health

Minor psychiatric disorders were reported by 56.6%. Respondents with minor psychiatric disorder were more likely to report physical health problems. (Fisher exact value (p) : <0.00, OR: 17.135, 95% CI: 2.148 – 136.679).

Treatment seeking behaviour

Among the respondents reporting physical health problems, 71.7% had sought treatment. Public health care providers (35.9%) were sought more commonly when compared to private providers (28.3%) and self-treatment (8.3%). The services being inexpensive was the common reason for choosing public health care provider (51.9%), Distance from health facility was the common reason for respondents who preferred self treatment (41.7%) and private health care (36.6%) service providers.

Unhealthy habits

Tobacco was used by 59.3% of the respondents and 38.6% consumed alcohol. Men had greater odds of consuming alcohol when compared to women (Fisher exact value (p) : <0.00, OR: 16.9, 95% CI: 7.121 – 40.156).

Discussion

This study shows that a significant proportion of the waste-pickers working in the dump yard in Chennai, 91.7% have symptoms suggestive of physical health problems, while 71.7% sought treatment for their physical health problems. The study shows an association between physical health and age, respondents less than 36 years of age had higher odds of developing physical health problems. This could be due to the duration of the stay of the waste-pickers in the dump yard, i.e., respondents who are young tend to spend more number of working hours in the dump yard. Females had higher odds of developing body ache compared to males which could be due to the physical stress females undergo as they not only work at their work places but also usually have considerable amount work at home. The dump yard chosen as the work area for the study has garbage piled up in the form of tall hillocks. The waste-picker has to climb up the pile of garbage to collect waste and climb down with the pile of garbage which is usually heavy, rested on their backs, head or shoulders; hence carrying of heavy weights could also be a reason for females showing higher odds of developing body ache as many women have lesser physical strength. Association of gender and injuries which showed males had higher odds of getting injured when compared to females; this could be because males engage themselves or are more willing to take risk when compared to females.[8] Respondents with mental health problems were more likely to report physical health problems; this could be psychosomatic in which the psychological factors play a role in contributing to the illness along with other pathophysiological factors.[9] This has to be interpreted along with the presence of mental illness in this population. The study conducted among waste-pickers in Delhi or in Bangalore did not report anything about body

ache of the waste picker which contributed to the maximum proportion of physical health problems among the respondents of this study; this could be because of the garbage hillocks as mentioned earlier in this paragraph. The studies in Delhi[4] and Bangalore.[3] reported significant proportion of waste-pickers having respiratory problems which was the second highest contributor of physical health problems in this study; this could be due to the smoke in the dump yard as a result of burning of garbage. There were several vector breeding sites in the dump yard, but no comments regarding vector borne disease could be made as the data regarding it was not collected.

Another study reported 44.7% of MPD among waste-pickers in Brazil.[5] this study reported 56.6% MPD among the waste pickers. Waste-pickers have no surety regarding sustainability of their work, average family size of the respondents is 5 and average income is Rs 5000 so the income they earn may not be sufficient to support their family, these could be the reasons for their depression and anxiety (MPD). The study in Bangalore reported majority of the waste-pickers in Bangalore to be women and children.[3] The child labour act in India defines child as below fourteen years of age. [10] During the course of data collection in this study a child aged 12 was noted picking waste in the dump yard, it is not appropriate to state that there were not many child waste-pickers or child labourers in the area of study because during the time of study though there was only 1 child aged below fourteen, there were waste-pickers who were aged below 25 working for the past 10-15 years indicating they were below the age fourteen when they joined this profession. Use of protective gear by waste-pickers were 70.3%, though the numbers seem good the gears they use cannot exactly be called protective gear; as the gears were usually picked up from the garbage pile. Low usage of face masks could explain the significant proportion of respiratory problems and use of gloves picked up from the pile of garbage which results in poor hygienic conditions of the hands could possibly explain gastro intestinal problem and skin problems. The waste-pickers were aware about the need of

protective gear during work but did not have the appropriate resources

Results of this study cannot be generalized as this was conducted only in one dump yard, the sample size was low and a convenient sampling was done. One of the main limitations of the study was that medical examination was not done to diagnose physical health problem. Respondents of required sample size were difficult to obtain due to summer season (lean period for waste picking) and lack of permission to enter the yard. Further research should emphasis on mental health problems among waste-pickers in India

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*Letter to NAC***JSA's Reservations Regarding NAC's UHC-Recommendations**

JSA (Jan Swasthya Abhiyan) finds the NAC (National Advisory Council) draft on Universal Health Coverage (UHC) disappointing. The NAC draft is replete with contradictions, half-baked theorisation of some its crucial propositions and unilateral statements without providing justification for the same. This brief note outlined JSA's reservations about this draft note by NAC.

The NAC draft's silences –

- 1) It is totally silent of the measures needed to regulate the pharma industry as well as the 'diagnostic centres' and the need to close capitation fee based private medical colleges. These are two of the most important factors which have contributed to the burgeoning of the private health sector which is replete with irrational, wasteful, exploitative practices. No advance towards UHC is possible without eliminating these two important causes of sickness of private health care in India. However, in NAC's understanding, one of the 'major consequences of the low public spending on health' in India is '*... there has been a rapid expansion of an unregulated private sector which is dominated by a large number of unqualified health professionals (quacks) who end up exploiting the consumer.*' There is no reference to the above mentioned features of the 'unregulated private sector' which too have achieved 'rapid expansion' and which are far more powerful as well as deleterious.
- 2) The NAC has silently accepted the 12th FYP's target of Public Health Expenditure of 1.87% of GDP when the Planning Commission's own HLEG had recommended '**at least' 2.5% of the GDP.** With the kind of miserly increase in Public Health Expenditure, (the) goal of UHC becomes a distant dream.

In all its discussion about various options, NAC has assumed low public funding. If NAC is an independent body, why can it not take a strong position and move beyond HLEG's recommendation about Public Health Expenditure? JSA shares the criticism of many experts that if the huge 'tax-forgone' which is a bounty enjoyed by the private interests and which now exceeds Rs 500,000 crores, is even partially reversed, there will be more than enough money for social sector spending, including health.

- 3) There is nothing in the NAC draft about integration of AYUSH in the system for UHC. On one hand AYUSH has been marginalized and neglected so far. On the other hand most of the AYUSH graduates indulge in allopathic practice. Today half of the registered medical graduates are AYUSH graduates. Given this background integration of AYUSH in the system for Universal Health Care is a major challenge. But NAC is totally silent on this.

As regards the specific recommendations made by NAC, NAC has clarified that '*The NAC's Working*

Group on Universal Health Care has built upon the recommendations accepted by the Planning Commission for the Twelfth Five-Year Plan.' The JSA has reservations about the watered down Health Chapter of the 12th FYP and it was expected that NAC, as an independent group, would not limit itself completely to the framework of the 12th FYP. Hence JSA is disappointed by many specific recommendations of the NAC. What follows is not an exhaustive comment, but sufficient to convey some major problems with NAC recommendations.

The most critical elements of the draft are in ***Section 5, where a rollout plan for UHC has been laid out.*** As per the NAC, the UHC model should ensure availability of a 'good package of Essential Health Care (EHC)' where at least 70 percent funds would be invested at the Sub-Centre and PHC level, while the former would act as a gatekeeper '*with an effort to ensure that more than 95 per cent of the patients are fully cared for at this level.*' There is also an emphasis on 'strong performance pressure at all levels of the health delivery system.' Strangely 'capitation payments', 'purchaser-provider splits' have been used as examples of community based accountability mechanisms. Given that Public Health Facilities from PHCs onwards have been chronically underfunded and neglected and that they will continue to carry out mandatory Public Health Functions like ensuring quality of water and sanitation, catering to Public Health Emergencies, carrying out medico-legal functions etc. any proposal which expects Public Health System to compete with the private sector for 'capitation payments' would be an inherently unfair competition. It will foreclose all possibilities of strengthening government health services. The experience of Andhra Pradesh after the Arogyasri scheme, suggests that with increasing share of budget is going towards private sector, government health services are increasingly facing resource crunch. On the other hand, government health services in Thailand are drawing increasingly higher amount of resources because these institutions are equipped through decades of efforts to strengthen public health system.

Out of the three options which NAC envisions to be available to states, two are merely different combinations of managed care and insurance based model.

The three models are:

1. *Roll back the insurance schemes into state health budgets*
2. *Merging the state-owned delivery apparatus into the insurance schemes; and*
3. *Develop a hybrid solution in which the state owned delivery infrastructure co-exists with the insurance schemes in a tightly coordinated manner' (page 21).*

The 2nd and 3rd options are being placed even though the limitations of insurance based models have been acknowledged at the same page of the draft. NAC does

not even attempt to answer how the 'hybrid model' would address the longstanding criticisms of 'adverse selection', 'induced demand' and 'moral hazard.' Though the NAC selectively refers to HLEG report, the HLEG's recommendations to avoid 'purchaser and provider split' and insurance has been largely ignored.

With respect to the **first option viz. 'rolling back insurance into state health budgets'** the paper essentially argues against this model. The ground for doing this is not convincing. Its first reason- that the incremental outcomes would not be visible is misleading, since even without merging, the health outcomes of RSBY or even its financial protection role is far from established. Its second reason that the capacity to contract in secondary and tertiary care would be limited is also questionable because the capacities required for NAC's third option are far more. Its argument that the partitioning of these two pools is not desirable, because it could lead to fragmentation between primary and secondary care can be averted by the simple measure of insisting that all insurance companies provide reports on a monthly or quarterly basis stating the payments they have made by district, by disease and by facility and this information is integrated into the primary care system.

In our understanding **rolling back insurance into state health budgets is feasible and desirable.** In such a system every facility will get a normative budget allocation which includes the salaries. But in addition, it gets a case load based reimbursements from a district untied fund, which could also include some incentives for providers. This, in our understanding, is the essence of the Thai model for secondary and tertiary care. This caseload based reimbursement can be made directly through a unit of the Government, and there is no need for an insurance company. Since the providers are largely public, or not for profit hospitals and the reimbursement package is modest, there is no undue incentive for over-supply. Though HLEG mooted this idea of rolling back insurance into the state health budget, it refrained from saying how this could be done.

In the name of strengthening health system, privatisation of Sub-centres and PHCs and running these institutions through PPP have been proposed. In appendix B called Strengthening health Systems it is stated: '*...that regardless of piloting UHC State Governments need to assign top priority to the following ...b) Free- Up Supply Side Constraints at Primary Care level: Arrival of insurance would mean that privately owned hospital infrastructure would now start to grow because it would benefit from government financed patient flow as its fee for service and private insurance patients- making it much more viable. Explore similar ways of unlocking supply constraints at the primary-health-centre and the sub-centre level using the PPP route perhaps as part of the empanelment process for the insurance schemes.*'

NAC seems to believe that publicly financed patient flows is good to make the hospital industry viable and the same can be used to make the 'primary care industry' also viable. JSA is completely opposed to this proposal. It may be noted that there is no pretence to any

single payer system, cashless service, health outcomes, etc. Also there is a clear statement of intent to extend this to PHC and SC using PPPs and insurance. The proposal is to make health system amenable to private profit at the cost of public exchequer. JSA strongly opposes such a proposition. Instead of a 'coverage with minimal, insurance-based packages through insurance route,' a public health logic demands that public financing should help the public health system to lead the provisioning of health services. In this context, there is also a scope for in-sourcing of certain kinds of private providers (including not for profit providers) in a manner that would strengthen and complement the public health system instead of weakening it, using such providers where and if necessary and under clear terms, conditions.

In the very next paragraph it states- '*a good example of this effort (the context of moving care closer to people) would be to shift deliveries to the sub-center with the PHC acting more as an Emergency Obstetric site with a blood bank in place.*' In public health terms a blood bank in every PHC is a rather impractical concept.

In appendix A, a **Healthcare Social Enterprise (HSE)** model is being considered. HSE is identical to the 'managed care' formulations of the July draft of the 12th Plan - the words used are slightly different, but the model is even more explicit. Though the NAC rightly acknowledges the well-known maladies of such models, it is baffling to see that HSE is being explored as possible option. It says '*... however this approach (i.e., the HSE) is fraught with many risks, and was clearly not the preferred choice of the HLEG. The implementation of such an approach even on a pilot basis requires the availability of the complete level of funding required for UHC.*' Moreover, since only corporate entities are powerful enough to bid for contract for district level network, **NAC proposal in effect opens doors to corporate players in primary health care.** JSA's fear is clearly that some private providers who are the owners of HSE entities will use public purchasing to provide free service and free drugs as a ploy to force out the market all other small providers who do not fall in line and join their HSE.

In appendix C, where designs of insurance schemes are being considered, the point is made that currently insurance schemes are doing a good job by '*unlocking supply constraints*' a the higher levels of care by allowing patients to access private care facilities – '*but to prevent unnecessary tertiarisation we need to bring in PHCs and sub-centers in private control into insurance schemes so that private sector will enter these areas and this will unlock supply.*' It then also says that hitherto insurance has focussed on low frequency high costs conditions- but it must now move on to include moderate frequency and moderate cost events such as maternity into the scheme and this can be done by bringing in PHCs and sub-centers into insurance ambit. Sub-centers and PHCs would further act as gatekeepers and TPAs- but the way it is written it could also lead to funnel cases into tertiary care. It suggests a starter pack for insurance scheme that would address existing conditions.

The NAC essentially proposes '**Universalization of Health Insurance with some minor modifications**

to use public budget. To see UHC as a means to incentivise privatisation of health care and organisation of private profit is clearly a contradiction to the principles of public health.

NAC has proposed the setting up a *National Health Regulatory and Development Authority (NHRDA)* in addition to the National Clinical Establishment Act. It is aware that *'There is considerable overlap of the structure and the functions contained in the NHRDA with those in the CEA.'* Therefore it says *'In order to ensure optimal monitoring and supervisory oversight, it is necessary to carry out an exercise to harmonise the role and functions of these two, and to establish a responsive canopy of legislation without any overlap or conflict of jurisdiction.'* But the measures it suggests are such that the fact of the CEA being in place has been ignored and provisions in CEA are being repeated in NHRDA. For example, it suggests *'Define roles, responsibilities and functions of district, state and national councils through dialogue and consultation with the states, professional bodies and associations and civil society organizations active in public health.'* The CEA already has a provision for National, State Councils and District authority. To suggest setting up of additional councils is beyond comprehension, a suggestion which is moreover legally untenable. CEA has other problems and needs a separate discussion. But the way NAC has conceptualised NHRDA is neither legally tenable nor an advance over CEA.

Further the proposed structure District HRDA will not have any government officers and have only private sector and other players is a prescription to capture by both corporate and professional interests

The presence of a strong and reliable public health system also serves to put a check on the unregulated growth of the private sector and helps in preventing unethical practices in the private sector. In the absence of a properly functioning public health system, efforts at regulation of the private sector – both for costs and quality — are likely to be much less successful as people would continue to be driven to the private sector. Most importantly, provision of health care by the public sector allows citizens to hold the Government accountable and to meaningfully demand for health as a fundamental right.

As regards conditionalities, NAC has in fact suggested so many conditionalities! The comments on **conditionalities for sanction of funds by center to states** are truly confusing and contradictory. On page 7 the NAC condemns the conditionalities proposed by the government as ambiguous and non-measurable, but yet in page 6 they themselves propose it as the best conditionalities in another context. (this relates to public health cadre and availability of essential drugs). NAC wants more flexibility- but more conditionality too. There are only a couple of sentences about flexibility. Thus the draft says flexibility should be there *'to move resources from one head to another provided they comply with the essential deliverables under each head that has been agreed to in the PIP with MoHFW.'* While suggesting so many conditionalities, NAC seems to be unmindful of the fact that the centre contributing only half of what the states contribute, that health is a state subject!

The proposal for a 25% of funds being earmarked as untied funds is (see para. 3.1) a very inefficient way of funding and since this too in its own way is curbing flexibility in the district.

JSA would welcome NAC's overall position about **Community action** when it says 'Community action is both an essential element and a key strategy of UHC.' But the recommendations are problematic and indicate lack of in-depth understanding about role and limitation of Community Action. For example the recommendation – *'Encourage and assist VHSNCs and urban committees to use their untied funds to undertake local health action like health education for adolescents, providing extra food to malnourished women and children, and tracking a few key health indicators to ensure equity and inclusion.'* It is quite questionable whether this is an appropriate recommendation, given the nature of the problem. In this whole section, there is no recommendation about strengthening and expanding the ongoing programme of Community Based Monitoring, which has been in operation on a pilot basis for five years in several areas with positive results!

NAC has **favoured district level UHC pilot plans**, something HLEG had not recommended. When crucial policies are to be decided at state level, for example, if medicine procurement policy is to be decided at the state level as has been done in Tamil Nadu, Kerala, and Rajasthan; if recruitment/transfer policies are to be decided at state level, how can there be a pilot UHC in a district?

The Alternative

The JSA has outlined its approach to Universal Health Care in its booklet. In the context of the NAC recommendations, Jan Swasthya Abhiyan would like to state that corporatization and privatization is a remedy worse than the disease. What is really needed is to pursue the goal of constructing an effective, efficient, strengthened and accountable public health system which can lead the National Universal Health Care System and which can effectively utilise, when needed, regulated private providers which are in-sourced, to serve the social objective of Universal Health Care. Defending and promoting a 'social logic' as we roll back the 'profit logic' in the health sector will require major transformations not only in the area of health care, but also in a wide range of social determinants of health – food security and nutrition, water supply, sanitation, working conditions, housing, environment, education and other sectors. There is a need to reclaim public systems, to strengthen and expand them. There is a growing recognition that public services need to be made accountable through active involvement of citizens at various levels. Initiatives ranging from demanding the right to information, denouncing corruption, conducting social audits, to community-based monitoring exemplify the social churning that is underway to redefine the relationship between public systems and the public at large. Fair, accessible, affordable and public universal health care will not happen overnight in India, rather it would require thorough rejection of privatization and corporate-friendly public-private partnerships.

Genocide in Attappadi

-Dr. B. Ekbal

A team of doctors visited Attappadi from May 18 to May 21, 2013 to study the health related issues of adivasis in the region at the instance of the Kerala State Committee of CPI (M). The State Committee had taken the decision to send the medical team to Attappadi in view of the growing infant mortality rate in the adivasi settlements.

Attappadi is situated in the Mannarghat Taluk in Palakkad district of the Western Ghats region of Kerala. Attappadi Reserve Forest is an informal buffer zone bordering the Silent Valley National Park. It is bordered to the east by Coimbatore district in Tamilnadu, on the north by the Nilgiris and south by the Palghat District. There are 184 tribal hamlets in Attappadi. The tribal population of the valley belongs to the Muduga, Irula and Kurumba tribal communities. The tribal population was about 90 percent earlier. But with the large scale encroachment by settlers from Kerala and Tamil Nadu tribals now form only 30 percent of the total population. The present population of the tribal communities is around 30,000.

The team of doctors reached Palakkad on the 18th and held discussions with the journalists who had published reports on the health related issues of the adivasis. The team visited the adivasi settlements at Nellipathy, Kandiyoor, Bhoothivazhi, and Kadampara on the 19th. The doctors talked to the parents of the diseased children. They made enquiries about the medical care received by the pregnant women and lactating mothers and subjected them to general medical checkup. They also held tests for determining the nutritional status and physical growth of the children in the settlements.

The team visited the Tribal Specialty Hospital at Kottathara and Primary Health Centre at Puthoor on the 20th and held discussions with doctors, nurses and other hospital staff on the facilities available in the hospitals. The team talked to the patients, bystanders and the local people. They also went to Puthoor Panchayat Office, local anganwadis and ICDS centre and held discussions with the staff. They then visited Swami Vivekananda Medical Mission Hospital and held discussions with Dr. Narayanan. They also met office bearers of NGOs like "Thambu" and on 19th evening and Shri Induchudan, Director, AHADS (Attappadi Hill Area Development Society) on 20th evening. On 21st morning the doctors met leaders of various organizations who shared their concerns on the adivasi issues with them. A press conference was held at 11.30 am at the press club, Palakkad. The team could not visit the schools and hostels of Attappadi as the visit had taken place during the vacation.

Findings of the Medical Team

- The problems relating to malnutrition and anemia are acute among pregnant and lactating women. Most women had undergone abortion more than once. Premature birth and low birth weight are the most important reasons for the alarming rate of neonatal mortality. Most children weigh only 600 to 800 gm at birth. Malnutrition and anemia among pregnant women lead to Intra Uterine Growth Retardation among unborn children. This year itself about 30 children have died within hours/days of their birth.

- The case of a 21-year old girl whom we met who has passed pre-degree needs special mention. She weighs only 35kg, which is the normal weight of a twelve-year old. She is now pregnant for the fourth time. All three previous pregnancies were abortive. The loss of blood during abortions among anemic women lead to further debility which leads to further abortions, forming a vicious circle. The following specific deficiencies have been noted in medical care of pregnant women:

- Pregnant women are not given Iron Folic Acid tablets for the past few years.
- Iron injection has to be administered to women who suffer from chronic anemia. 'Imferon' which is not generally prescribed at present is used for the purpose. The injection requires intra-muscular administration. When this is administered to patients without sufficient muscle mass, it causes not only acute pain but also enhances the chances of abscess. It may be noted that in the place of outdated Imferon, Iron Sucrose, which is more effective and can be injected intravenous, is administered in most other places now.
- Most pregnant women suffer from high blood pressure and consequent edema and toxemia of pregnancy.
- It is evident that little antenatal check up and care is given during pregnancy for adivasi women. The total neglect of adivasi women at Attappadi is extremely unfortunate, especially so against the background of women even in the remote villages in the other parts of the state undergoing repeated medical checkup and ultrasound scanning during pregnancy.
- Almost all children we examined suffered from anemia and malnutrition. Dr. G. Satyan (Retired Pediatric Surgery Professor from Government Medical College) who had held physical examination on behalf of the voluntary organization "Thambu" on 19th May informed us that all 100 children he had examined suffered from malnutrition.
- Most of the anganwadis do not function at all. They do not undertake their primary responsibility of providing additional nutrition, observing the nutritional status and facilitating medical intervention whenever required for pregnant women and children. The anganwadis do not maintain any register with adequate entries for the purpose. Only wheat, uppumavu and Bengal gram are distributed through the anganwadis.
- Contrary to practices in other places, the anganwadis in Attappadi do not distribute eggs, milk and bananas among the children. The Government had included distribution of egg and milk as part of the package it had declared recently when reports of the alarming rate of infant mortality had become public. The arrangement was that anganwadi teachers should initially meet the expenses in this regard from their pockets which would be reimbursed by the Government at the end of each month. There is no justification for burdening the ill-paid anganwadi teachers with such financial responsibilities. The Government has acted in the most irresponsible manner in this regard.

¹ Email: ekbalb@gmail.com

- The Panchayat Members/Asha Workers/Tribal Promoters do not regularly visit anganwadis.
- Against the requirement of nine anganwadi supervisors, only one was posted till last week. The situation has slightly improved with the posting of five supervisors last week. But they are unable to visit anganwadis in interior areas in the absence of adequate number of vehicles. There is only one old jeep at the ICDS centre.
- The adivasis do not relish the matta rice supplied through the ration shops. They exchange it for white rice which is consumed with curries prepared by them
- The MNREGS has been discontinued for some months. The legally guaranteed work for 100 days is not provided in Attapadi. AHADS had stopped functioning since 2010 due to the stoppage of Japanese funding. The employment through AHADS has also become unavailable since then.
- The adivasis used to cultivate indigenous food crops like ragi, cholam, varaku, thuvara and other legumes, following the method of jhum cultivation. A well balanced diet consisting of iron, carbohydrates and proteins were available to the adivasis through such cultivation. In course of time, about 10,000 acres of fertile agricultural land were lost to the Adivasis through land encroachment by outsiders. The widespread destruction of forests by the British and the encroachers impoverished the lands held by adivasis, resulting in the destruction of the irrigation facilities. The only option of the Adivasi farmers then was to become wage labourers.
- The combined impact of the loss of indigenous food, the unavailability of alternate nutritious food and the loss of employment opportunities led to widespread poverty and consequent health problems among adivasis.
- The absence of adequate number of doctors and other staff and the non-availability of modern medical equipments are the most important concerns of the hospitals in Attapadi. In 2002 Puthoor PHC was one among the awardees for the best primary health centre in the state. The construction of the quarters utilizing the award money is yet to be completed. Now one doctor has been posted on contract under NRHM. The permanent doctor is on leave at present. When Dr. Prabhudas was working here, he used to conduct labour and admit patient in the inpatient ward. Now there is only treatment for out patients.
- In Kottapuram Tribal Specialty hospital which has the status of a taluk hospital no appointments has been made to the posts of surgeon, anesthetist, pharmacist and store keeper. One gynecologist has been posted on contract basis under NRHM a few days back. But ultrasound scanning facility which is required for anti natal checkup is not available here. The work on the quarters for doctors and other staff is yet to be completed. Many doctors are staying in lodges at present. At the same time five quarters are vacant in Agali Community Health Centre. The only problem is that the quarters cannot be occupied now as the supply of electricity has been disconnected as the previous residents had not paid electricity charges.
- It is also reported that the Community Health Centre at Agali and the Primary Health Centers at Sholaur and Vat Lucky are not functioning well, though we have no first hand information about these centres as we could not visit them.
- There are 28 sub-centres in Attapadi. The performance of field officers and Asha workers in these centres is not satisfactory.
- It may be noted that the Bethany and Kuppuswami private hospitals across the border in Tamil Nadu provide free pregnancy care including caesarian operation to adivasis while they don't get proper medical care in our government hospitals.
- There is informal prohibition in Attapadi. Toddy tapping is also not permitted. But people in Attapadi consume liquor in large quantities available from the liquor outlets from the Tamil Nadu boarder shops and the illicit liquor breweries. The use of liquor is not confined to men alone. Women also take to alcohol. Pregnant women are no exception. There are indications that ganja is cultivated in interior areas. AHADS had appointed 360 forest watchers, of whom 280 were adivasis. Apart from protecting the forest cover, they were also destroying ganja cultivations and preventing illicit liquor brewing. These watchers have been dismissed with the cessation of the activities of AHADS. This has led to the renewal of ganja cultivation and illicit brewing.
- It is quite possible that there could be a major liquor disaster in Attapadi in the near future.
- The AHADS which had taken up activities related to environmental protection, watershed management and rejuvenation of agriculture with Japanese assistance in 2000 had to wind up its activities in 2010. The AHADS has been partially successful in achieving its targets related to forestation and watershed management. AHADS has been conducting many development programmes through the tribal development societies and also built about 2000 houses for adivasis. But the AHADS has not been successful in making the barren lands cultivable enough so that the adivasis could start farming activities. However, it could provide employment to adivasis under various schemes. There is uncertainty about the future of AHADS. It is learnt that the agricultural package proposed by AHADS is not being implemented due to the lack of cooperation from the part of the agriculture department.

Recommendations

- Government has to immediately implement effective measures to curb the growing neonatal mortality. There are about 1000 women in Attapadi who are either pregnant or lactating mothers. Those suffering from severe malnutrition and anemia should be shifted to the Nutrition Rehabilitation Centre which the Government has promised to be set up. About 6000 children who suffer from malnutrition have also to be shifted to this centre. It is possible that some would be unwilling to stay in the rehabilitation centre. They should be supplied with nutritious food in their homestead and the feeding process should be carefully monitored by Asha workers and Tribal Promoters.
- Iron Folic Acid should be distributed regularly. In place of Imferon injection, Iron Sucrose injection should be administered.
- Indigenous food crops like ragi, chama, cholam, veraku, tuvara and tina should also be included in the food items distributed through ration shops and

anganwadis. The Civil Supplies Corporation should introduce shops on the move for selling essential items including indigenous food crops to the adivasis.

- MNREGS should be restarted immediately. The pending payment of 25 lakhs rupees for work done should be immediately released. Adequate compensation should be given for the periods when employment was not provided under the scheme.
- Asha workers, Tribal Promoters, anganwadi teachers and the field officers in the sub centres should be retrained. Their activities should be properly coordinated and monitored.
- The activities under the anganwadis should be improved. Adequate number of vehicles should be provided for anganwadi supervisors. New anganwadis should be set up in 20 settlements where there are no anganwadis at present. At present each beneficiary is getting only Rs. 6 (Rs 4 from ICDS and Rs 2 from the panchayats). This should be enhanced to at least Rs.12. Additional allotment should be made to panchayats for this purpose.
- The functioning of excise department should be strengthened to prevent illicit brewing and sale of liquor and cultivation of ganja. A de-addiction centre should be set up at Kottathara hospital. Training should be given to Asha workers, field officers in the health department and tribal promoters in de-addiction counseling
- The tribal development societies should be given permission to utilize money available with them for meeting emergencies.
- A comprehensive health and nutrition survey of Attapadi adivasis should be undertaken. The responsibility can be entrusted with Achutha Menon Centre for Health Science Studies under Sree Chitra Tirunal Institute of Medical Sciences and Technology.
- Doctors and other staff should be provided with adequate staff quarters. Appointments should be made to the vacant posts immediately. Sufficient number of new posts should also be created and appointments made as early as possible. Facilities for ultra sound scanning should be made available in all hospitals.
- Various schemes for the welfare of adivasis are being implemented through Scheduled Tribe Welfare, Health and Family Welfare and Social Justice Departments and Local Self Government institutions. There is at present no arrangement for continuous monitoring or coordination of various programmes undertaken by different departments. There is total anarchy in the implementation of various welfare schemes. Under the circumstances it is imperative to immediately appoint an efficient officer in the IAS rank for coordinating the activities undertaken through various departments.
- Primary Health Centers and schools should be opened to cater to the needs of the Kurumba community in the interior of the Attapadi area.
- The Right to Forests Act should be implemented. Schools and health centres wherever necessary should be set up for adivasis under the provisions of the Act.
- It is very difficult to implement and coordinate development activities at Attapadi from the District headquarters at Palakkad. Hence Attapadi Taluk should be created for the effective implementation of

Attapadi development programmes.

- The Tribal Hospital at Kottathara should be upgraded into a medical college. A general nursing school and para medical school should also be established along with the proposed medical college. This medical college can be utilized to train health human power for all the adivasi settlements areas in the state. A certain number of seats in these institutions should be reserved for adivasis and the Government should meet the entire expenses for their studies. It should be made mandatory to those who undergo training in these institutions to work in adivasi areas for a specified period.
- A meeting of experts in the field, people's representatives and representatives of various social organizations should be called to discuss the future of AHADS. The department of agriculture and AHADS should undertake coordinated activities for the implementation of watershed management programmes. A system of agriculture combining the best practices of the traditional agriculture and innovative features of modern agriculture should be implemented. AHADS should be developed into national level institution for rural development and water shed management.
- A lasting solution for the problems facing adivasis is to make Advasis real farmers. This objective can be achieved only by combining the best practices of the traditional agriculture and innovative features of modern agriculture in a manner that would be acceptable to the adivasis. A number of programmes relating to watershed management, improvement of irrigation facilities and protection of rivers and forests will have to be implemented and the encroached fertile lands will have to be given back to the adivasis through appropriate legislation. For this we have to evolve a comprehensive adivasi-centred plan for the development of Attapadi in consultation with all concerned.

The extremely poor health condition of the pregnant women and children, the apathy of the general public towards the misery of the adivasis and the criminal negligence of the authorities concerned have created the worst possible health scenario in Attapadi. **It can be stated without any exaggeration that the adivasis of Attapadi are actually going through a Silent Genocide.**

The welfare of adivasis should not be regarded only as a humanitarian obligation. On the contrary, it should be regarded as the bounden duty of the general public and the Government. It should be treated as a human rights issue.

The Medical Team:

1. Dr.B.Ekbal, Retired Professor of Neurosurgery, Government Medical College, Health Activist
2. Dr. Krishnan Unni: Gynecologist, Retired Civil Surgeon Kerala Health Services
3. Dr. K.E. Urmilla Professor of Pediatrics, Pariyaram Medical College
4. Dr. A.K. Jayasree, Professor of Community Medicine, Pariyaram Medical College
5. Dr. Aslesh. O.P. Assistant Professor of Community Medicine, Pariyaram Medical College
6. Dr Ranjith, P, Post graduate student in Pediatrics, Pariyaram Medical College

-Dr.B.Ekbal July 2, 2013

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Subscription Rates

	Rs.		U.S\$	Rest of world
	Indv.	Inst.	Asia	
Annual	200	400	20	15
Life	1000	2000	100	200

*The Medico Friend Circle bulletin is the official publication of the MFC, Both the organisation and the Bulletin are funded solely through membership/ subscription fees and individual donations. **Cheques/ money orders/DDs payable at Pune, to be sent in favour of Medico Friend Circle, addressed to Manisha Gupte, 11 Archana Apartments, 163 Solapur Road,***

Hadapsar, Pune - 411028. (Please add Rs.15/- for outstation cheques). email: masum@vsnl.com

MFC Convener

Convener: Sunil Kaul, Jennifer Liang, Raju Narzary and Shelley Dhar. Address for contact : the ant, Udangshri Dera, Rowmari, P O Khagrabari, via Bongaigaon
Dist Chirang (BTAD), Assam 783380
Email: sunil@theant.org
Ph: 094351 22042 (m) 03664 293803 (r)
the ant Office: 03664 293802
MFC Website: <<http://www.mfcindia.org>>

Editorial Committee: Anant Bhan, Dhruv Mankad, Devaki Nambiar, Sukanya Rangamani, V.R. Raman, Mira Sadagopal, Shelley Saha, C. Sathyamala, Sathyashree, Mira Shiva and 'Chinu' Srinivasan.

Editorial Office: c/o. LOCOST, 1st Floor, Premananda Sahitya Bhavan, Dandia Bazar, Vadodara 390 001.

Email: chinusrinivasan.x@gmail.com. Ph: 0265 234 0223

Edited & Published by: S. Srinivasan for Medico Friend Circle, 11 Archana Aparts., 163 Solapur Road, Hadapsar, Pune 411028.

Views and opinions expressed in the bulletin are those of the authors and not necessarily of the MFC, Manuscripts may be sent by email or by post to the Editor at the Editorial Office address.

MEDICO FRIEND CIRCLE BULLETIN PRINTED MATTER - PERIODICAL

Registration Number : R.N. 27565/76

If Undelivered, Return to Editor, c/o. LOCOST,
1st Floor, Premananda Sahitya Bhavan
Dandia Bazar, Vadodara 390 001

