

Child Malnutrition and Gender Discrimination in South Asia

India, Pakistan and Bangladesh account for child malnutrition rates that are higher than in sub-Saharan Africa. This is directly related to discrimination against women in south Asia. The focus of all interventions has to be on improving the health status of women generally and as far as the infant is concerned, targeting most interventions in the first three years of life. Additionally, universal school feeding programmes will ensure that a poor family is saved the cost of at least one square meal for its children. Finally rapid action is needed so that access to safe water and sanitation is extended to the entire population.

SANTOSH MEHROTRA

Half of the world's malnourished children are to be found in just three countries – Bangladesh, India and Pakistan. There could be no greater irony than the fact that of the seven declared nuclear states in the world, two – India and Pakistan – account for more undernourished children than any other country in the world in absolute terms. In fact, the child malnutrition rates in India and Pakistan are also much higher than in sub-Saharan Africa on average. We explore these paradoxes in this paper.

The paper begins with a conceptual framework for understanding the phenomenon of child malnutrition (Section I). Section II presents the nutritional status of children in a cross-regional perspective, and finds that south Asia has the worst child malnutrition rates in the world. Section III discusses the determinants of these malnutrition rates in south Asia in the light of the conceptual discussion above. It focuses especially on India since the country has the world's largest number of malnourished children. The final section goes on to draw some brief policy implications.

I The Conceptual Framework

Child malnutrition cannot be reversed as the child grows into adolescence and adulthood; in other words, lay policy-makers should think twice before dismissing the phenomenon of child malnutrition as something confined to childhood. Malnutrition is both a symptom as well as a cause of poverty. Hence, policy-makers who merely worry about the incidence of income-poverty have much less reason to be complacent. Moreover, poverty incidence can in fact be lower than child malnutrition incidence (e.g., in India, where child malnutrition runs at 46 per cent of the child population, while the government of India claims poverty incidence is only 29 per cent) [Planning Commission 2002].

Child malnutrition has lifelong implications. Malnutrition often starts in utero and extends well into adolescent and adult life. It also spans generations. First, low-birthweight (LBW) infants who have suffered intra-uterine growth retardation (IUGR) as foetuses are born undernourished and are at a far higher risk of dying in the neonatal period or later infancy. If they survive, they are unlikely to catch up on this lost growth later and have a higher probability of suffering a variety of developmental

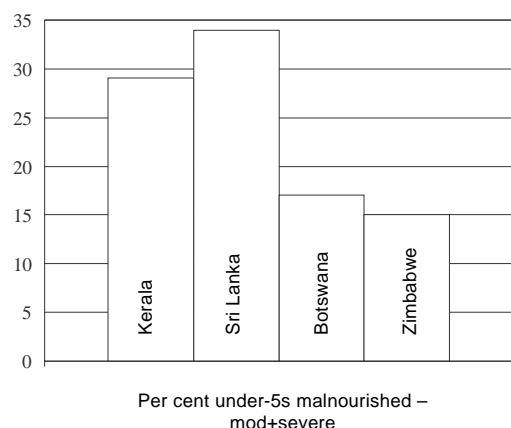
deficits. Second, during infancy and early childhood, infections and insufficient intake of nutrients exacerbate the effects of foetal growth retardation. Most growth faltering, resulting in underweight and stunting, occurs from before birth until about two years of age – the effects of which continue. Underweight children tend to have more severe illnesses, including diarrhoea and pneumonia.

Third, during adolescence a second period of rapid growth may serve as a window of opportunity for compensating for early childhood growth failure. However, the potential for significant catch-up at this time is limited. Also, even if the adolescent catches up on some lost growth, the effects of early childhood malnutrition on cognitive development and behaviour may not be fully corrected. "A stunted girl is thus most likely to become a stunted adolescent and later a stunted woman. Apart from direct effects on health and productivity, adult stunting and underweight increase the chance that her children will be born with low birthweight. And so the cycle continues" [ACC/SCN 1992].

Other than in utero growth, child nutritional status is mainly the result of the child's food intake and health status – at an immediate level. However, each of these variables itself has underlying determinants.¹ The child's health status is determined by environmental conditions (safe drinking water, sanitary means of excreta disposal, good hygiene), health services, and the mother's caring capacity. The child's food intake is determined by food availability and the mother's caring capacity – making caring capacity common to both main determinants of child nutritional status.

Caring capacity and caring practices are overwhelmingly influenced by the status of women in the society, since they are the principal care-givers in all societies. Caring practices are child feeding, health-seeking behaviours, cognitive stimulation of children, and care and support for mothers during pregnancy and lactation. Conceptually one can see that the woman's own health, her physical ability to breast-feed for an extended period (especially the first six months), her knowledge and beliefs, her control of economic resources, her autonomy in decision-making – all these determine her caring capacity. In other words, her status relative to other household members and her general status in society are crucial determinants of her capacity to provide the care that her children need, for them to realise the potential of their physical and mental growth.

Figure 1: Even High-Achievers in South Asia Have Higher Malnutrition Rates than in Those in SSA



Food availability is affected by production and distribution of food – distribution not just within the country, but also within the household (the latter being a critical area where girls and women may be disadvantaged). Women’s status even affects the availability of food and household food security. In many countries, especially in Asia and sub-Saharan Africa, women are closely involved in food production and acquisition.² Yet their lack of control over how food is distributed within the household is of critical significance to their own health and well-being, and that of their children. In addition, women’s knowledge of the nutritional benefits of different foods and their ability to direct household resources toward food for home consumption can also crucially affect the child’s well-being. Moreover, even if health services are available, whether the mother or the child is able to access the services at times of need, may or may not be a decision in the mother’s hands. In other words, the proximate determinants of the child’s nutritional status – the child’s food intake and the child’s health status – are likely to be affected by the mother’s status.

The child’s health and nutritional status will also be determined, as mentioned above, by the quality of environmental conditions – safe drinking water, sanitary means of excreta disposal, hygiene practices – and the quality of health services. The ability of children to absorb nutrients will be affected by the vulnerability

to diarrhoeal diseases, which can be limited by safe water and sanitation and good hygiene. In case a child is afflicted with disease, the availability, quality and affordability of health services – whether in the private or the public sector – will crucially affect the duration and intensity of disease, and may make all the difference between life and death.

II South Asian Child Malnutrition in Cross-Regional Perspective

There are three indices of under-nutrition – under-weight, stunting and wasting – expressed in standard deviation units from the median for the reference population. Children who are more than two standard deviation units below the reference median are considered to be undernourished, and those more than three standard deviations below the reference population are deemed severely malnourished. If children have low weight-for-age, they are said to be underweight. This is a composite measure that takes into account chronic and acute malnutrition. Stunted children are those who are short for their age; the height-for-age measures the prevalence of chronic under-nutrition, which could result from inadequate nutrition over a period of time or chronic or recurrent diarrhoea. Height-for-age is not affected by the season in which data is collected. Wasted or thin children (who are suffering acute malnutrition) are those whose weight-for-height is lower than the reference population, i.e., body mass in relation to body length. Wasting levels can vary with the seasons, since it shows inadequate nutrition in the period just before the survey.

Among all regions, south Asia has the worst record on malnutrition by all three measures. In developing countries, on average, 29 per cent of children are underweight; in south Asia it is 49 per cent. Thirty-three per cent children in developing countries are stunted; but 48 per cent in south Asia are. Ten per cent children in developing countries are wasted; the share is 17 per cent in south Asia (Table 1). For all three indicators of malnutrition, south Asian children are worse off than children in sub-Saharan Africa.

In each region there are countries/states which have achieved social indicators which are well above those for other countries in their region at the same income level. Thus in sub-Saharan Africa, Zimbabwe (in the 1980s) and Botswana could be regarded as high-achievers, just as in south Asia, Sri Lanka and the state of Kerala (India) were distinct high-achievers in respect of health and education indicators [Mehrotra and Jolly 2000].³ What is remarkable is that the African high-achievers in the 1980s (Botswana and Zimbabwe) still have much lower under-weight rates than the south Asian ones do (Sri Lanka and Kerala state, India) (Figure 1).

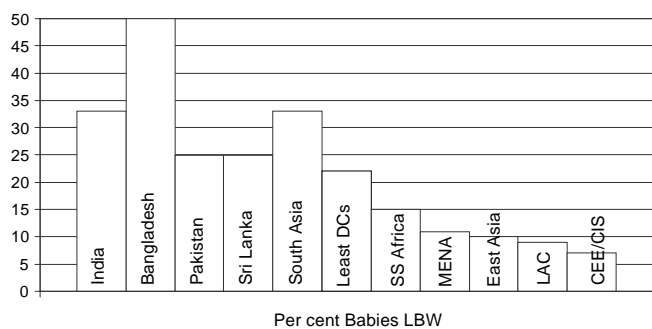
Ramalingaswami et al (1996) appropriately asked the question: if child malnutrition rates are so strongly associated with child deaths, and child malnutrition rates in south Asia are much worse than in SSA, then why are child survival rates in south Asia so much better (and under-five mortality rates so much higher) than in SSA?⁴ Thus, under-five mortality rate (U5MR) in SSA is 107, while in south Asia it is only 74 on average; while child malnutrition afflicts half of south Asian children, but only a third of African ones. Their answer was that the south Asian child usually has better access to modern medical care, especially antibiotics – available from myriad of private doctors available in rural and urban areas who are also interested in selling medicines.

Table 1: South Asia – The World’s Worst Child Malnutrition Values

	Per Cent of Under-Five (1995-2000*) Suffering from			
	Underweight		Wasting	Stunting
	Moderate and Severe	Severe	Moderate and Severe	Moderate and Severe
Sub-Saharan Africa	31	10	10	37
West Asia and north Africa	17	5	8	24
South Asia	49	21	17	48
East Asia and Pacific	19	–	6	24
Latin America and Caribbean	9	1	2	17
CEE/CIS and Baltic states	7	2	6	16
Industrialised countries	–	–	–	–
Developing countries	29	12	10	33
Least developed countries	40	13	12	45
World	28	11	10	32

Note: * Data refer to the most recent year available during the period specified in the column heading.

Figure 2: Small Women Create Low-Birth Weight Babies



The child in SSA is more likely to have only government health services, which may be more oriented to providing preventive services, not lifesaving ones. If this is the explanation for lower mortality of children in south Asia (compared to sub-Saharan Africa), then what explains the much higher child malnutrition rates in south Asia – in fact the highest rates in the world?

III Determinants of Malnutrition Rates in South Asia

If malnutrition begins in utero, then the first evidence we get that the child will be born undernourished is from the birth-weight of the infant. The first cause of the high rates of malnutrition in south Asia is the high proportion of infants who are born with low birth-weight. In fact, as Figure 2 shows, the incidence of low birth-weight is highest in south Asia, compared to any other region in the world. Nearly a third of Bangladeshi and Indian children and a quarter of Pakistani children are born with low birth-weight.

Why is the incidence of low birth-weight so high for babies born in south Asia? Low birth-weight of babies is essentially an indicator of the nutritional status of mothers. Simply put, small mothers give birth to small babies. In addition, the weight that mothers are supposed to put on during pregnancy in south Asia is lower than what is required for the healthy growth of the child. Thus during pregnancy, the average woman should gain about 10 kilos of weight. While most women in Africa do gain nearly that much weight, most women in south Asia gain around 5 kilos only [WHO 1996]. In other words, the baby's nutritional status at birth is a direct outcome of the woman's nutritional status.⁵

In poor households, the mother will feed the husband and the sons first, and eat last herself, along with the daughters. There may be inadequate food left over for the females or the poorest quality food. Combined with the work requirements for a woman in a patriarchal society, the limited food or poor quality food may translate into poor health status. In India, in the 1990s, the fact that half of all children continue to suffer from malnutrition is particularly ironic, given that the food reserves (buffer stocks maintained for meeting the needs of drought-affected areas or areas hit by natural disasters) have risen from 20 million tonnes to 64 million tonnes, and the country has actually been exporting food.

The National Family Health Survey – 2 (1998-99) gives us an insight into the nutritional status of women in India. As we discussed in Section I, the height of an adult is an outcome of

several factors including nutrition during childhood and adolescence. A woman's height can be used to identify women at risk of having a difficult delivery, since small stature is often related to small pelvic size. The risk of having a baby with a low birth weight is also higher for mothers who are short. Women who can be identified as nutritionally at risk, in terms of height, are those below the range of 140-150 centimetres. Thirteen per cent of women in India are below 145 cms in height. The percentage of women below 145 cms is highest for illiterate women, and tends to decline with increasing education; thus, over 15 per cent of illiterate women are below 145 cms in height, but only 7.7 per cent of those who have completed high school or above in terms of education. Seventeen per cent of the scheduled caste women are below 145 cms; 13.5 per cent of scheduled tribe and other backward caste women are similarly short, while for other (i.e., upper caste) women that share drops to 11 per cent.

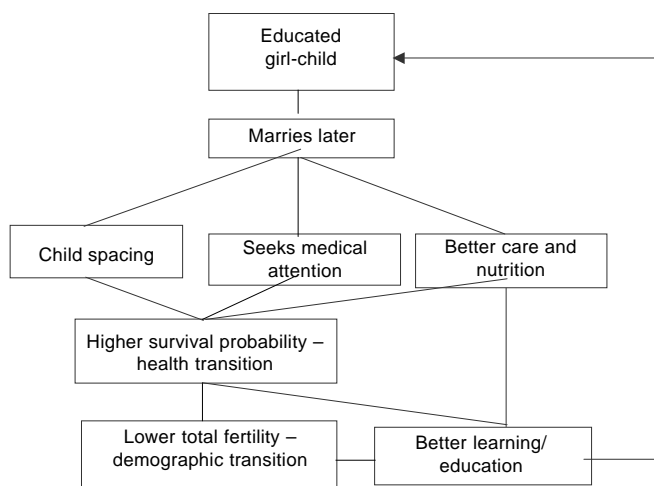
The body mass index (or BMI, relating a woman's weight to her height) is used to evaluate thinness (and obesity). Chronic energy deficiency is indicated by a BMI of less than 18.5. As much as 36 per cent Indian women have BMI below 18.5. However, nutritional problems as indicated by BMI levels are especially pronounced for rural women (41 per cent), illiterate women (43 per cent), and scheduled caste and scheduled tribe women (nearly 20 per cent).

While BMI and shortness are indicators of protein-energy malnutrition, there is also a "hidden hunger", as reflected in micro-nutrient deficiency (iron, vitamin A or iodine). Thus, one indicator of the nutritional status of women is the prevalence of iron-deficiency anaemia. Anaemia is the status of having a low haemoglobin level in the blood.⁶ Anaemia may become an underlying cause of maternal mortality and perinatal mortality. In addition it results in an increased risk of premature delivery and low birth weight. In other words, it is an important determinant of child malnutrition in south Asia, quite apart from blighting the lives of millions of women. While 40 per cent of women in sub-Saharan Africa suffer from anaemia, 60 per cent of women in south Asia do [Ramalingaswami et al 1996].

Precisely half of pregnant women in India suffer from some form of anaemia. Those with a height below 145 cms are more likely to suffer anaemia than those who are taller. Those with a BMI of less than 18.5 are also more likely to suffer from anaemia than those with a higher BMI. Anaemia is higher for rural women than for urban women. It decreases steadily with increases in the level of education, from 56 per cent among illiterate women to 40 per cent among women who have completed at least high school. While on average 52 per cent of Indian women suffer from any form of anaemia (mild, moderate and severe) scheduled tribe women have the highest level of anaemia (65 per cent), followed by scheduled caste women (56 per cent) and women from other backward castes (51 per cent); for women not in these three groups it is 48 per cent.

While the caste of a girl cannot be changed, her educational level can be. What is interesting is that women in south Asia have the worst educational indicators relative to men compared to all other regions. Table 2 (worst educational indicators for women in south Asia) shows that gender discrimination in respect of education (at least for indicators selected here) exists in all regions of the world except in Latin America. However, the adult literacy rates for women as a percentage of men are the lowest in south Asia – 63 per cent, compared to 71 per cent in west Asia

Figure 3: Life Cycle of an Educated Girl



and north Africa (72 per cent in SSA). Primary enrolment rates are also the lowest, just as secondary enrolment rates are.

Why should literacy and educational levels of the mother matter for the health and nutritional status of the child?⁷ It should matter since the mother is the principal care-giver. Figure 3 illustrates in a graphic way the synergy between interventions within the social sectors – by presenting the social impact of educating a girl – in the form of a life cycle of an educated girl [Cochrane 1979, 1988; World Bank 1996]. An educated girl is likely to marry later than a girl who remains without any education – this is especially true if the girl’s education extends to at least junior secondary level and she engages in economic activity outside the home. Early marriage and childbirth, before the girl’s own body has fully formed, will adversely affect the baby’s and mother’s health. Independent research has also established that an educated girl, will also have fewer children, will seek medical attention sooner for herself and her children, and is likely to provide better care and nutrition for herself and her children. This would reduce the probability of morbidity through disease and hence survival of her children beyond the age of five. Over time, the survival of her children will change the behavioural pattern of the family in respect of fertility and contraception – thus lowering the overall fertility rate. Smaller household size improves the care of children, and lower fertility reduces the size of the school-age population. These benefits of girls’ education accrue from generation to generation. In other words,

in order to maximise the complementarities among basic social services, it is crucial to focus on universal primary education early on, particularly for girls – but it also assumes that health/family planning/water and sanitation services are available. Above all else, it implies that one of the most important interventions for the child’s health and nutritional status is the mother’s educational level.

Even more importantly, it reinforces the argument that the nutritional status of the child is outcome of a process that goes on over the whole life cycle, and without the right interventions, leads to an inter-generational transfer of ill-being from women to children, irrespective of the latter’s gender. By far the most important evidence of systematic gender discrimination over a lifetime is provided by the fact that the life expectancy of women in south Asia is lower than that of men by a greater margin than anywhere else in the world. Thus, Figure 4 (life expectancy females as a percentage of males 95-99 by region) shows that evidence of systematic gender discrimination over the life cycle in almost all regions. It is well known that for biological reasons, women tend to have a longer life expectancy than those of men. Thus, as Figure 4 shows, in all regions women live longer than men. Women’s life expectancy exceeds that of men most in central and east Europe and the Commonwealth of Independent States (CEE/CIS).⁸ That shows the potential for women’s life expectancy to exceed that of men. While in all the regions, life expectancy for women relative to that of men is lower than in CEE/CIS, it is by far the lowest in south Asia. This can only happen as a result of systematic discrimination against women over a lifetime, which gets perpetuated over generations. It is precisely this phenomenon that Sen had referred to in his analysis of the “missing millions” of women, since lower life expectancy translates into a lower than possible female-to-male ratio in the total population of a country.

Not only women’s capabilities, but their agency has been severely restricted in south Asia. Sen (1995) speaks about how women’s agency is an instrument of not only their own well-being but that of the entire family. The notion refers to the freedom women have to engage in work outside the home, to earn an independent income, to have ownership rights, and, of course, to receive education. Wherever these freedoms and rights prevail, the well-being of women is positively affected. However, women in India face impediments even to their leaving the home, let alone seeking opportunities for paid employment. Thus, NHFS-2 reports that freedom of movement is limited for the majority of ever-married women in India. Only 32 per cent of women say that they do not need permission to go to the market, and only

Table 2: South Asia’s Education Indicators – Females as a Percentage of Males

	Adult Literacy Rate			Primary School Enrolment Ratio					
	1995-1999*			1995-1999* (Gross)			1995-1999* (Net)		
	Male	Female	Female as Per Cent of Male	Male	Female	Female as Per Cent of Male	Male	Female	Female as Per Cent of Male
Sub-Saharan Africa	64	46	71.9	80	67	83.75	60	51	85
West Asia and north Africa	74	53	71.6	98	88	89.8	88	80	90.9
South Asia	69	43	62.3	99	81	81.8	78	64	82
East Asia and Pacific	91	79	86.8	107	105	98.1	98	96	97.95
Latin America and Caribbean	89	87	97.75	104	104	100	92	92	100
CEE/CIS and Baltic states	99	95	95.95	100	97	97	92	90	97.8
Industrialised countries	–	–	–	104	103	99	96	96	100
Developing countries	81	66	81.5	99	89	89.9	84	77	91.6
Least developed countries	63	44	69.8	84	69	82.1	63	54	85.7
World	83	69	83.1	99	91	91.9	85	79	92.9

* Data refer to the most recent year available during the period specified in the column heading.

Figure 4: Outcome of Systematic Discrimination against Women in South Asia



24 per cent say that they do not need permission to visit friends or relatives. As expected, women who earn money have much more freedom of movement than other women. But the point is that while half of all women in SSA are involved in some kind of work outside the home, only a quarter of women in south Asia do [Ramalingaswami et al 1996].⁹ In India, NFHS-2 reported that 61 per cent had not worked in the past 12 months; only 20 per cent were employed by someone else (with 14 per cent working in family farm/business and 5 per cent self-employed) [IIPS 2000]. Thus autonomy, and hence agency, of a majority of south Asian women is circumscribed.

Other Factors

Gender discrimination is not the only reason for high child malnutrition rates in south Asia. As we noted in our conceptual framework, the duration, frequency and severity of disease, especially diarrhoeal disease, is an important determinant, since it affects the absorption of nutrients by the child. The prevalence of disease is affected by the availability of safe water and sanitation. Even though south Asia has a much higher coverage of population by safe water (87 per cent in total, 92 per cent in urban and 85 per cent in rural areas, compared to SSA's 54 per cent in total, 82 per cent in urban and 40 per cent in rural areas), it has a much lower share of the population covered by safe means of excreta disposal. Thus, in south Asia only 37 per cent of the population has safe sanitation (76 per cent in urban, and 21 per cent in rural areas), while in SSA 54 per cent of the population has safe sanitation (80 per cent in urban and 41 per cent in rural areas). When one combines this fact with the phenomenon that the density of population in SSA is a fraction of that of south Asia (23 per sq kilometre, as opposed to 230 in south Asia), the enormity of the problem becomes clear. The overcrowding worsens the environmental hygienic conditions for a child in south Asia. The greater density of population would be particularly harmful in urban areas, where overcrowding in south Asia is intense. The situation is compounded by even worse coverage of safe sanitation in rural areas (the level of urbanisation is not that different between the two regions, with 38 per cent in SSA as against 29 per cent in south Asia). Overcrowding would clearly lead to much greater disease, thus affecting the absorption of nutrients by children.

However, here too the story may not be as simple as the mere quantitative differences in coverage of safe sanitation and the

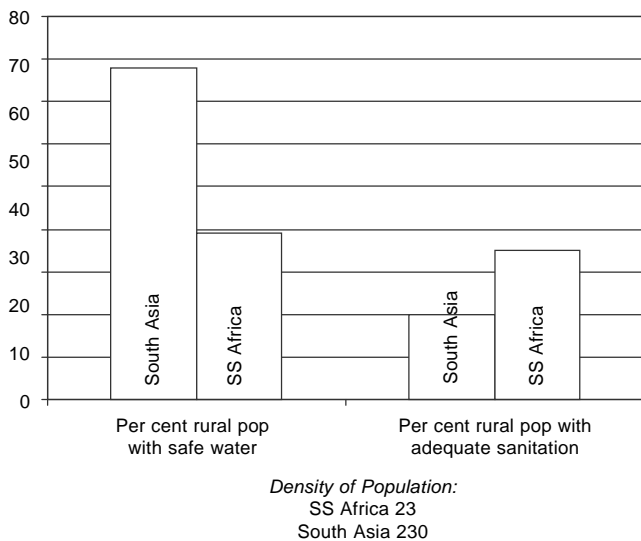
density of population. We began by noting that in south Asia there is a much larger number of physicians per 1,00,000 population than there is in SSA. Thus in India there are 48 and in Pakistan 57 physicians, compared to the much less than 20 per 1,00,000 in the majority of countries in SSA.¹⁰ That would suggest that despite the greater prevalence of disease in south Asia for the reasons mentioned above, people also have much greater access to medical care. However, the real issue is whether women have the autonomy to actually seek medical attention for their sick children or for themselves when it is needed.

From the National Family Health Survey - 2 in India, we have information regarding women's autonomy in these respects, which might shed light on this question. In order to measure women's participation in household decision-making, NFHS-2 asked the woman to report who in their household makes decisions about obtaining health care for herself. About half of all women were not involved at all in decisions about seeking health care for themselves (49 per cent). Only 28 per cent of the women interviewed took that decision independently. Those women who earned an income were asked who decides how the money they earned was to be used. This is relevant to the issue of health seeking behaviour by women - whether for themselves or for their children - since over 80 per cent of contacts with health professionals in India are with private practitioners, rather than with the public health system. Thirty per cent of women who earn money report that only their husbands or only others in the household make the decision on how the money they earn will be used.¹¹ In other words, despite the plethora of physicians in the country, including in rural areas, there is no certainty that medical care will be sought at all, given the out-of-pocket costs involved, or sought in time before the malaise worsens, thus delaying recovery and recuperation and prolonging the disease. Repeated episodes of illness without timely treatment are likely to reduce the child's (or the mother's) ability to absorb nutrients.

Yet another explanation is available for the high child malnutrition rates in south Asia. WHO-UNICEF guidelines recommend that an infant must be exclusively breast-fed for the first six months. The available data suggest that in south Asia half of all infants were exclusively breast-fed (while that share was only a quarter in SSA, according to Ramalingaswami et al (1996)). Data from the National Family Health Survey-2 for India suggest that 55 per cent of infants were exclusively breast-fed in 1998, 23 per cent receive breast milk plus water, and 20 per cent receive supplements along with breast-milk. Although the share of breast-fed babies may be higher in south Asia (and India) compared to SSA, the point is that we have already established that the health status and general status of women in south Asia is worse than in other parts of the world. Their poorer health status would prevent south Asian women from breast-feeding their babies adequately. In fact, a study-based on findings from the National Family Health Survey-1 in India (1992-93) concluded that breast-feeding with supplements is more beneficial than exclusive breast-feeding even for children at very young ages (less than four months). That report suggests that mothers who are in poor health themselves may not be able to provide adequate breast milk for their infants. In other words, yet another explanation for the high child malnutrition rate ultimately comes back to the status of women.

The preceding discussion has already indicated that the earliest years of a child's life, particularly the first three years are critical

Figure 5: Disease, Sanitation and Density of Population



to the growth of the child in later years. Thus it indicated that in utero growth of the baby, her proneness to disease in the early years, and whether or not she is exclusively breast-fed in the first six months, are all contributory factors to the child's nutritional status. After the first six months, the infant needs supplementary foods in order to meet the protein, energy, and micronutrient needs of children. Since south Asian mothers are unable to provide breast-milk in adequate quantities, it is highly likely that south Asian infants need supplementary foods even more and earlier than six months. However, apparently in south Asia only a third of infants age six months receive such supplementary foods (when that share is as high as two-thirds in SSA, according to Ramalingaswami et al (1996)).

In India, NFHS-2 for 1998 indicates that only 24 per cent of breast-feeding children who are six months old consume solid or mushy foods. This proportion rises to only 46 per cent at nine months. Even at 12 months of age, more than one-quarter of breast-feeding children in India did not eat any solid or mushy food the day or night before the interview. Only 35 per cent of breast-feeding children age 6-9 months receive solid or mushy food, as recommended [IIPS 2000]. In other words, poor knowledge of mothers about sound feeding practices is another factor that accounts for the high child malnutrition rates.

IV Some Policy Implications

Based on the conceptual framework with which this paper began, and the empirical evidence presented in the preceding two sections, one can draw a number of policy implications. Despite the presence of considerable food surpluses in India, there has been an entitlement failure on a massive scale, so that widespread hunger and malnutrition persists side by side with rotting food in warehouses around the country. There has been state-induced market-failure in this area. State producer subsidies for agricultural products, together with state procurement of output at inflated prices have ensured that market prices for foodgrain have remained out of reach for the poor. This outcome is mainly explained by strong farm lobbies (especially for wheat and rice).

At the same time, the public distribution system (PDS) for foodgrain has remained inefficient, and riven by corruption, so that the poor benefit little from it.

Hence both sides of the coin have to be addressed: procurement prices and the PDS. A functional PDS can help to mitigate the effects of such market failure, and can even ensure that they do not translate into entitlement failure on a mass scale.

The problem is that even when there might be no entitlement failure at the household level, for a poor household, the intra-household allocation of food may discriminate against women and girls, thus having health and nutritional effects which last a lifetime. A gender-fair intra-household food allocation will be determined in the long run by women's autonomy, which can be enhanced by ensuring schooling for all, and further reinforced by employment outside the home, particularly in non-agricultural employment. Since employment in non-agricultural sector is a function of schooling, the latter is a prerequisite for triggering women's autonomy.

Meanwhile, given the fact that the state, even with the best political will in the world, will be unable to intervene in the household allocation of food, a second best solution must be found. School-feeding programmes for all children will not only ensure that all children, especially poor children, come to school, but it will ensure that a poor family is saved the cost of at least one square meal for its children. Besides, since hungry children learn less than children who are well-fed, it makes sense to ensure that a functional school-feeding programme is put in place in every school in south Asia. In some of the least developed countries of south Asia (Afghanistan, Bangladesh, Nepal, Bhutan) this might require some donor support, or perhaps a combination of support from such UN agencies as WFP and UNICEF. Clearly this programme would be targeted at children of school-age, and at least in terms of nutritional outcomes (as opposed to their educational effects), can only have long-term effects – given that malnutrition sets in in utero, and then gets compounded during the first three years of a child's life, with life long consequences. In other words, school feeding will have no effects on stunting of girls, but may mitigate wasting and underweight, thus improving their health status in the run up to pregnancy. Most Indian states provide three kilogram ration of grains. However, this needs to be substituted by a cooked meal as that has already been demonstrated to be more effective.

It is also well known that feeding women during pregnancy has very limited impact on low birth weight of the baby, barely increasing the baby's birth weight by a mere 10-20 grams. Hence, nothing but a life cycle approach to the problem can make a serious dent in the problem. In other words, the focus of all interventions has to be on improving the health status of women generally, and then as far as the infant is concerned, targeting most interventions to the first three years of life. Nevertheless, it is remarkable that until a few years ago, that was not the focus of interventions. Thus, India has one of the world's largest pre-school feeding programmes – the Integrated Child Development Scheme – which has been in existence for a quarter of a century. In fact, it now covers almost all districts of the country. However, the programme was until recently focused on the 3-6 age group, rather than the 0-3 age group. That emphasis has indeed changed in recent years, but it will be years before the impact of the change will begin to be felt. The policy implication is that all south Asian countries need to have a programme with national coverage,

comparable to the ICDS in India, and naturally focused on the 0-3 age-group.

Even more importantly, our analysis suggested that ICDS-type programmes must rely on continuous home visits into the first year after the baby's birth, in order to ensure that complementary food is introduced definitely by four months. As we saw earlier, undernourished women may not be able to breast-feed effectively even during the first four months, so it is critical that solid, mushy foods are introduced by four months. Home visits will also ensure that during the first four months after giving birth, the mother's health condition is also monitored, so that her ability to exclusively breast feed her baby is continuously evaluated. Regular home visits, however, require a functional primary health care system, which provides complete reproductive health care services. At least in the states with the highest fertility rates in India, such a functional primary care system is non-existent.

We also saw that barely half of all women in south Asia exclusively breast feed their baby in the first four to six months. A system of home visits would ensure that information and knowledge about breast-feeding spreads. There is perhaps need for further research on knowledge, attitude and practices on the reasons why only half of all mothers in south Asia breast feed their babies, so that appropriate action can be designed.

Finally, rapid action is needed so that access to safe water and sanitation is extended to the entire population. In a region characterised by a high density of population, the health of the entire population, especially mothers and children, is heavily dependent upon their access to water and sanitation. South Asia is characterised by one of the lowest coverage rates in the world for safe sanitation. [47]

Email: santosh.mehrotra@undp.org

Notes

- 1 In fact, when analysts feed all these determinants – immediate as well as underlying ones – into a regression equation, in order to understand the effects of various factors on child nutritional indicators, it underestimates the impact and statistical significance of determinants lying at deeper levels of causality. See, e.g. Smith and Haddad (2000), discussed later.
- 2 Yet women do not have ownership rights over land. This is especially, but not only true in south Asia. For an analysis, see Agarwala (1999).
- 3 Zimbabwe has suffered serious social constraints on account of a variety of factors in the 1990s: repeated drought, the spread of HIV/AIDS, structural adjustment and political turmoil. Botswana social infrastructure has been ravaged in the 1990s by the HIV/AIDS epidemic.
- 4 Osmani (1997) attempted to explain this "Asian enigma", as to why south Asia's child malnutrition rate is much higher than SSA's, despite almost equal poverty rates, higher food availability in south Asia, and what he calls "comparable levels of public provision of health and sanitation services" (although the latter is questionable, as Ramalingaswami et al (1996) had already pointed out). The study used OLS regression to explore the determinants of child stunting for 66 developing countries in the early 1990s. The initial explanatory variables were per capita GDP (\$PPP), health services (proxied by population per physician), extent of urbanisation, and the female literacy rate. All are found to be significant determinants of stunting. A south Asian dummy variable is significant, suggesting (as we are doing as well) that additional variables underlie south Asia's extremely high rates of stunting. In fact, low birth weight, and factors influencing it (especially women's low status in south Asia), are found to be strong determinants of stunting. But LBW is endogenous in the model, and as Smith and Haddad say, hence the OLS estimate is probably biased. Given the several levels of determinants of malnutrition, we have confined our analysis of determinants to a conceptual level.
- 5 The mother's health status affects not just the child's nutritional status, but the prospects for survival of the child. Thus, in India, 60 per cent

of the infant mortality rate is accounted for by neonatal mortality (i.e. death within 28 days of birth). In fact, while vaccine preventable causes of infant mortality have reduced IMR in India in the 1990s, neo-natal mortality has remained constant. Neonatal mortality is highly correlated with low birth weight. Personal communication from Vinod Paul, All India Institute of Medical Sciences, New Delhi.

- 6 Haemoglobin is essential for transporting oxygen from the lungs to other tissues and organs of the body. Anaemia results from a deficiency of iron, folate, vitamin B12, or some other nutrients.
- 7 Gender discrimination should matter not merely for the reason that mothers are care-givers, but for the sake of the well-being and capabilities of the woman herself. For a detailed philosophical discussion of this issue, see Nussbaum (2000).
- 8 The ratio is highest in CEE/CIS countries on account of excess male mortality after the transition began. Hence the proper comparator is really the ratio for industrialised countries.
- 9 These authors also suggest that while in Africa, the greatest obligation on a woman is to look after her husband's children, in south Asia, tradition requires a woman to make her husband and mother-in-law the focus of her responsibilities.
- 10 See, e.g. the numbers in Table 6 in UNDP (2002).
- 11 Forty-one per cent reported that they make the decision on their own, and 28 per cent reported that they make the decision together with their husbands or someone else in the household.

References

- ACC/SCN (1992): *Second Report on the World Nutrition Situation*, Volume I, Administrative Committee on Coordination/Sub-Committee on Nutrition, United Nations, Geneva.
- Agarwala, B (1994): *A Field of One's Own: Gender and Land Rights in South Asia*, South Asian Studies No 58, Cambridge University Press, Cambridge.
- Cochrane, S (1979): *Fertility and Education: What Do We Really Know?* John Hopkins University Press, Baltimore.
- (1988): 'The Effects of Education, Health and Social Security on Fertility in Developing Countries', Working Paper WPS 93, Population and Health Resources Department, World Bank, Washington DC.
- IIPS (1995): *National Family Health Survey (MCH and Family Planning)*, India 1992-93, International Institute of Populations Studies, Bombay.
- Mehrotra, S and R Jolly (eds) (2000): *Development with a Human Face*, Oxford University Press.
- Nussbaum, M (2000): *Women and Human Development: The Capabilities Approach*, Cambridge University Press.
- Osmani, S R (1997): 'Poverty and Nutrition in South Asia' in *Nutrition and Poverty: Papers from the ACC/SCN 24th Session Symposium*, Kathmandu.
- Planning Commission (2002): *India Human Development Report 2002*, Government of India, New Delhi.
- Ramalingaswami, V, U Jonsson and J Rohde (1996): 'The Asian Enigma' in *Progress of Nations*, United Nations Children's Fund, New York.
- Sen, A (1995): 'Mortality as an Indicator of Economic Success and Failure', *Innocenti Lectures*, UNICEF, Florence.
- Smith, LC and L Haddad (2000): *Overcoming Child Malnutrition in Developing Countries: Past Achievements and Future Choices*, 2020 Vision Food, Agriculture, and the Environment Discussion Paper 30, International Food Policy Research Institute, Washington DC.
- UNDP (2002): *Human Development Report 2002*, United Nations Developmental Programme, New York.
- WHO (1996): *Project of Nations*, UNICEF, World Health Organisation.
- World Bank (1996): *India: Primary Education Achievement and Challenges*, South Asia Country Department II, Report no 15756-IN, Washington DC.

Economic and Political Weekly

available at

Alter Media Bookshop

Brahmaswom Madom Bldg,
M G Road, Trissur 680 001, Kerala
Email: info@altermediaindia.com