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"Child survival" and Child Nutrition

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The two outstanding attributes of poverty are: high infant child mortality, and undernutrition, especially among children. The infant child mortality rate has been generally used as an index of the health and developmental status of a community.

Where there is all-round socio-economic development, it is to be expected that reduction in infant/child mortality ("child survival") will be accompanied by improved nutritional status of children who survive. However, the assumption that the changes in these two attributes of poverty will *always*, and *must necessarily*, go hand in hand, may not be valid. Strategies which ensure better child survival may not be always sufficient to bring about significant improvement in the nutritional status of children. In transitional stages, where development is incomplete or lopsided, it may be possible to achieve significant success in reduction of infant/child mortality without such success being reflected in significant improvement of the nutritional status of surviving children. It will, therefore, be a mistake to consider "child survival" as equivalent to or synonymous with improved child nutrition.

The objective of development is not merely to ensure that children "survive" but that they "live". A developmental strategy solely directed to ensure "child survival" will not be adequate to ensure a satisfactory state of health and nutrition of children.

The two dimensions of 'development': Development has two dimensions — economic and social; and poor societies stand in need of both. The vastness of India and its striking regional variations provide

an excellent opportunity for assessing the impact of the interplay of 'economic' and 'social' development and of the relative contributions of each of these two dimensions to the improvement of health/nutritional status of the population.

We may, for the purpose of this analysis, take up four States of India: Kerala, Uttar Pradesh, Bihar and Punjab.

The percentage of population below the "poverty line" in a State may be used as a convenient measure of its "economic development" (using the term to mean not the overall economic development of the State as a whole, but the actual economic status of the people as reflected in their income levels). We may, for our present purpose, use the prevailing definition of "poverty line";

The level of literacy in the population of a State, and more particularly, the level of female literacy of the State, may be considered, for our present purpose,

as an indicator of its "social development".

The levels of economic and social development in the States of Kerala, Uttar Pradesh, Bihar and Punjab are indicated in table 1.

On the basis of the criteria employed, the States under consideration may be considered to fall under the following three groups:-

Group 1: Kerala — with a high degree of 'social' development and poor 'economic' development.

Group 2: Punjab — with a high degree of 'economic' development and poor 'social' development.

Group 3: Uttar Pradesh and Bihar — with poor 'economic' development and very poor 'social' development.

Data regarding crude birth rate, crude death rate, infant mortality rate and toddler mortality rate in the four States (table 2) show that with respect to these four parameters, Kerala stands out as vastly superior to the rest; Bihar and Uttar Pradesh are the worst and Punjab is in between.

The messages that stand out from this analysis are (1) that, despite their poverty, the women of Kerala, because of their vastly superior educational levels are able to demand and effectively utilise the health and family-planning services provided by

Table 1

Levels of "Economic" and "Social" Development of 4 States

State	Economic development (percentage of population below poverty line)	Social Development	
		Literacy rate per thousand	Female literacy rate per thousand
Kerala	47.0	692	645
Punjab	15.1	407	341
Uttar Pradesh	50.1	274	144
Bihar	57.5	260	136

the State, (2) that, despite their vastly superior economic status, the families of Punjab, in the absence of "social development", have not availed of the health facilities as effectively as those of Kerala, and (3) that in situations where the effects of poor "economic development" are reinforced by the effects of poor "social development" as in Bihar and Uttar Pradesh, the picture is indeed most depressing.

Impact of economic and social development There has been a widespread erroneous impression that just because IMR and child mortality rates in Kerala are much lower than in other parts of the country including Punjab, the nutritional status of the children of Kerala is also vastly superior. That this impression is wholly unjustified is shown by the nutrition survey and anthropometric data in successive reports of the National Nutrition Monitoring Bureau. Poverty is as widespread in Kerala as in U.P. and other States (except Punjab) and the actual diets of the poor segments of the population in all these States are nearly similar and deficient (table 3). It is, therefore, not surprising that the nutritional status of the children of Kerala is by no means significantly superior to those of Uttar Pradesh (table 4). What Kerala has achieved because of superior 'social development' of the people is reduction in infant and child mortality and a better record of family planning and no more.

Literacy may motivate the poor to use available health facilities to combat illnesses and infections in children and the women to space their births; but literacy unfortunately cannot be a substitute for food or an antidote to poverty; it cannot bring about a reduction in "primary" undernutrition arising from dietary deficiency. The Kerala experience provides two lessons: (1) that it is misleading to speak of "child survival" as almost equivalent to eradication of undernutrition and sound health; (2) that it is wrong to argue that just because mortality rates in Kerala are low despite poverty and poor diets, those diets are in fact "adequate" and that all that the rest of the country should do to eradicate undernutrition is to combat infection and not bother about improving diets.

The above messages are reinforced by the finding that despite its poor "social development" reflected in its high rate of infant and child mortality and its relatively poorer utilisation of health care, the nutritional status of the children of Punjab is superior to that of the children of Kerala. The N.N.M.B. operations unfortunately do not cover Punjab; but there are good studies carried out with meticulous care in Punjab which provide useful data.

Table 2

Birth rates and Death rates in 4 States

State	Birth rate	Death rate	Infant Mortality	Child Mortality 1-4 years
Kerala	26.0	7.2	42	9
Punjab	30.3	9.4	117	12
Uttar Pradesh	39.6	16.3	177	23
Bihar	39.1	13.9	--	--

Table 3

N.N.M.B. Dietary Intake (CU/Day) - 1980

State	Calories	Protein
Kerala	2158	50.3
Tamil Nadu	2196	53.6
Karnataka	2992	79.0
Andhra Pradesh	2391	56.7
Gujarat	2333	67.4
Orissa	2468	58.9
West Bengal	2580	62.9
Uttar Pradesh	2115	69.6

Table 4

N.N.M.B. Percentage distribution of 1-5 year old children according to Gomez's Classification - 1980

State	Normal	Grade of Malnutrition		
		Mild	Moderate	Severe
Kerala	22.1	54.6	18.6	4.7
Uttar Pradesh	20.4	46.6	27.5	5.5

Table 5

*Incidence of Malnutrition in Punjab and other States in 1974 **

State	Normal	Grade of Malnutrition		
		Mild	Moderate	Severe
Punjab	(Up to 80% of std.)	(70% to 80% of std.)	(60% to 70% of std.)	(Less than 60% of std.)
13-24 months	26.7	35.0	27.4	11.0
25-72 months	31.4	38.4	24.8	5.5
Other States	(Up to 90% of std.)	(75% to 90% of std.)	(60% to 75% of std.)	(Less than 60% of std.)
13-60 months	3.4	22.1	52.6	21.8

* Standards used in both studies were identical.

Table 6

Mean Weights in Kg by age and sex of school children in Punjab, U.P., and Kerala

Age	Punjab**		U.P.*		Kerala*	
	M	F	M	F	M	F
6+	16.7	16.6	15.8	15.6	17.1	15.6
7+	18.9	18.7	17.5	17.6	17.4	16.7
8+	21.2	20.2	19.3	19.6	19.8	18.6
9+	22.7	22.1	21.5	20.2	20.2	19.5
10+	24.7	24.4	22.9	23.5	21.9	21.4
11+	26.2	26.9	24.9	24.3	24.7	23.7
12+	28.5	29.1	27.7	28.5	25.2	26.1

Table 7

Mean Heights of school children in Punjab U.P., and Kerala (in centimetres)

Age	Punjab**		U.P.*		Kerala*	
	M	F	M	F	M	F
6+	109.5	109.1	107.2	106.8	112.7	108.1
7+	115.2	115.6	113.3	113.1	113.2	109.6
8+	121.5	120.2	118.5	118.9	117.5	116.8
9+	125.5	125.3	123.2	122.7	121.8	116.6
10+	130.6	130.4	128.1	121.6	125.1	123.6
11+	133.8	135.4	132.8	131.7	130.4	128.8
12+	138.0	139.9	137.8	136.3	131.6	133.3

* N.N.M.B. data

** Naik et al

Data from the Punjab Nutrition Development Project jointly carried out by the Government of Punjab and CARE (Nutrition in Punjab Children, 1974, CARE) in 1974 have been compared with the N.N.M.B. data for 10 other States of the country including Kerala and U.P. (table 5). N.N.M.B. in 1974 (in fact up to 1976) had used the conventional Harvard standards and the Gomez's classification to grade malnutrition. (In 1976, N.N.M.B. switched over to a lower yardstick thus bringing about an abrupt "reduction" in 'moderate' and 'severe' malnutrition from 1976 onwards. This explains the "lower" incidence of malnutrition indicated in table 4). The Punjab Project had also used the conventional Harvard standards but had used 80 percent of the standard as the limit of normalcy (as suggested by

the Indian Academy of Paediatrics), 80 percent - 70 percent as 'mild' 70 percent - 60 percent as moderate and less than 60 percent as severe. Therefore, the figures for incidence of "severe malnutrition" in the two studies set out in table 8 are comparable. The incidence of 'severe' undernutrition in the pre-school children of Punjab was found to be less than half of that observed in the other States including Kerala and U.P.

Further evidence of the distinctly superior anthropometric status of the children of Punjab is provided by the studies of Naik et al (tables 6 and 7) on primary school children of Punjab (Naik P.A., Topi T.E., Kakar D.N., Singh, M. and Sandhu S.: *Ind. Paediatrics*: 1975. 12 p. 1083).

These observations show that the nutrition status of children of Punjab - that

is, that of such of those who survive the perils of infection and illness - is significantly better than those in the rest of the country including Kerala and U.P., possibly because of the vastly superior economic status, higher income levels and consequent better and more adequate diets.

Unfortunately, there is no State in India today which can boast of the degree of 'social development' attained by Kerala plus the degree of 'economic development' achieved by Punjab. India's health and nutritional problems will be largely solved only when both these mutually reinforcing dimensions of development are jointly achieved. It is only then that better "child survival" and better child nutrition will go hand in hand.

FOUNDATION NEWS

NFI Bulletin

● With the October 1983 issue, this Bulletin of the Foundation completed four years of its service. We appreciate the gracious offer of UNICEF to continue to support the publication of this Bulletin with a matching grant on the same lines as in the past three years. Besides this Bulletin, the Foundation is now undertaking publication of a series of Scientific Reports based on studies carried out under its auspices. In view of the expanding scope of the publication programme of the Foundation, it has now been decided to appoint a full-time Editor in charge of publications Mr. T. K. Parthasarathy, M.A., M.P.H., who has had considerable experience in the editing of the Health publication, 'Swasth Hind' for several years, has joined the Foundation as its full-time Editor of publications. The Foundation deeply appreciates the services rendered by Dr. (Mrs.) B. S. Malhan as its Hony. Editor for the past three years.

Task Force Meeting

● A meeting of the Task Force on Project Development of a feasible model for health/nutrition care of tribal non-tribal poor rural communities was held on September 23, 1983 under the chairmanship of Prof. P.S.S. Sunder Rao. The following members were present: Dr. S. N. Chaudhuri, Dr. K. K. Kaul, Dr. (Mrs.) Patel, Dr. Lincoln Chen, Mr. A. S. Prabhakar and Dr. C. Gopalan.