Chapter VII

INVESTMENT IN HEALTH

Introduction

Education and health are two forms of investment in human capital. Investment in them implies that there will be an improvement in people as productive agents. As Selma Muskin writes, "Health and education are joint investments made in the same individual. The individual is more effective in society as a producer and as a consumer because of these investments. And often the return on investment in health is attributed to education."[1] Though there are many similarities between health and education as investments, from the point of view of measuring the stock of human capital, the differences between two types of investments must be clearly understood. Again Mushkin has very well explained the difference between these two forms of human capital.[2] Health programmes increase the number in the working force as well as the quality of the labour product whereas education chiefly affects quality of the producers. Units of quality change through human capital formation by health programmes cannot be defined as tidely as units of education embodied in the labour force. There is no quality unit comparable to that of the number of years of schooling derived by Schultz as a measure of educational stock in the labour force. Closely related to the problem

of measuring quality changes attributed to health programmes is the question of assessing earning differences. In assessing private return to investment in education one begins with data on differentials in earnings according to years of schooling. Average difference in life time income of higher secondary and college graduates, for example, is corrected for the difference in ability and other factors, served as an index of return to higher education. We now have no similar indices of difference in income associated with gradations in health. More particularly we have no indices of differences in earnings reflecting such gradations.

In its simplest form the economic resources (Labour & Commodities) devoted to health care represent in some part an investment in health, i.e. the health outlays improve the labour product and continue to yield a return over a period of years. The labour product created by this care and savings in health expenditures in future, if any, as a consequence of reduction in disease, is the yield.[3]

Just as the stock of physical capital may be measured in a number of different ways, so the stock of health capital in people may be variously measured. This human capital formation by health care for a population may be counted - for example at cost- the cost of environmental and curative health services embodied over their life spans in each of the age coherts in the present labour force.

.3 Cost for this purpose may be set at the cost of acquisition of the health services in the years they were acquired; they may be determined on a replacement cost, or at constant prices prevailing in a base year. An attempt is made to estimate the health capital formed by estimating the addition to the labour product during the plan period. In section I the growth of investment in health, at current and constant prices, during planning is analysed. Section II presents an estimate of the formation of health capital in terms of labour product. The final section briefly outlines the main findings of this chapter.

I

Cost of Health Care

The information on the expenditure incurred on health by state as well as private individuals is given in table 7.I.

Table : 7.I (Rs. in crores)

Expenditure on Health : Public and Private

Year Exp.	Expenditure on Health (Current Prices)				Expenditure on Health (Constant Prices 1970-71= 100			
	Public	Private	Total	Per capita (Rs.)	Public	Private	Total	Per capita (Rs.)
1	2	3	4	5	6	7	8	9
1950-51	+ 10 (10.2)	88 (89.8)	98 (100.0)	2.72	19 (10.0)	167 (90.0)	186 (100.0)	5.16
1960-61	94.5 (32.0)	205 (68.0)	299.5 (100.0)	6.82	173 (37.0)	296 (63.0)	469 (100.0)	10.65
1970-71	211 (26.0)	612 (74.0)	823 (100.)	15.0	211 (26.0)	612 (74.0)	823 (100.0)	15.0
1979-90	811 (34.0)	1568 (66.0)	2379 (100.0)	36.0	403 (28.0)	1042 (72.0)	1445 (100.0)	22.0

*+ Figure is for the year 1951-52.

Source : National Accounts Statistics, Relevant Volumes, C.S.O. Government of India.

(Figures in paranthesis are percentages.)

Of the total expenditure on health of Rs. 98 crores incurred in 1950-51, the share of public expenditure was barely 10.2 per cent. (Rs. 10 crores). The share of private expenditure was Rs. 90 crores or 89.8 per cent). In the subsequent decades, the picture has substantially altered in favour of public sector. The respective shares (public private sectors) were 32 per cent, and 68 per cent in 1960-61. In 1979-80 the respective shares were 34 per cent and 66 per cent. Even then, the share of private sector in the total expenditure on health of 66 per cent is quite high. These shares for India are comparable to those for the U.S.A. In U.S.A., the shares are 25 per cent for state and 75 per cent for private individuals.[4] The point to be taken note of is, this, that in the two countries the income distribution is not at all comparable. In India income distribution is more skewed than that in the U.S.A. The implication of this for the accessibility to health services is that in India they (health) are by and large beyond the reach of the poor, since the share of state is just 34 per cent in the total expenditure on health services.

The total expenditure on health services at current prices increased from Rs. 98 crores in 1950-51 to Rs. 2379 crores in 1979-80, giving an annual rate of increase of 78 per cent during the period as a whole. On the other hand, at constant prices (1970-71 - 100) the total expenditure on health services increased from Rs. 186 crores in 1950-51 to Rs. 1445 crores in 1979-80, giving an annual rate of

increase of around 25 per cent. Thus, like expenditure on education the phenomenal rise in expenditure on health can also be attributed to the factor inflation. For measuring the stock of human capital formed through expenditure on health, we need to work out per capita expenditure on health at current prices. In 1950-51 it was around Rs. 3. In 1979-80 on the other hand, it was Rs. 36, giving an annual increase of 41 per cent. In real terms (1970-71 = 100) the increase in per capita expenditure works out to barely 11 per cent per annum. It was Rs.5 per annum in 1950-51 and Rs. 22 in 1979-80.

We assume that the health expenditure per worker is the same as that of population i.e. per capita. On this assumption we can estimate the stock of human capital embodied in the working population by multiplying per worker health expenditure (per capita health expenditure) by the number of workers. This expenditure on health care whether on population or on workers is treated as cost of health services.

The expenditure incurred on the health of working population so calculated comes to slightly more than one third of the total expenditure on health services both at current and constant prices. (see table 7.II) The share of health expenditure on working population of around 43 per cent in 1960-61 was higher than that of around 39 per cent in 1950-51. Similarly in 1979-80 also the corresponding share

Table : 7.II (Rs. in Million)

Total Expenditure on Health of Labour Force
Nominal and Real Terms.

Year	Labour Force (Millions)	Current Prices Per Capita (Rs.)	Total Expenses Rs. (Million) (2±3)	Constant Prices Per Capita + (Rs.)	Total Expenses Rs. (Million) (2+5)
1	2	3	4	5	6
1950-51	139	2.72	378 (38.6)	5.16	717 (38.5)
1960-61	188	6.82	1282 (42.7)	10.65	2002 (42.7)
1970-71	180	10.0	2700 (32.8)	15.0	2700 (32.8)
1979-80	244	36.0	8784 (36.9)	22.0	5368 (37.1)

Source : Col. 2. Census of India Volumes 1951-1961 - 1971-1981 Economic and General Tables.

Col. 3.5 Table 7.1

+ 1970-71 = 100.

of 37 per cent was higher than that of 33 per cent in 1970-71. We have not ventured to analyse the trend in the share of health expenditure by workers because of change in the definition of workers in 1970-71 census, which makes comparision difficult.

The share of health expenditure incurred on workers is as high as their share in total population which was in the range of 39 to 43 per cent.

Expenditure on health when viewed as investment adds to the labour product. In India if we compare decade-wise growth in the labour force and population we find that as against an increase of 21.5 per cent in population between 1951 and 1961, the growth of labour force gives an increase of 35 per cent. Similarly, between 1971 and 1981 the growth of labour force of 35.5 per cent was higher than that of 24.6 per cent growth in population.[5]

9

II

Measurement of Labour Product

The growth, both of population and labour force, is affected by many factors. One such factor in our context is investment in health care. Improvement in health status can be seen in the increased life expectancy. Also in a developing country like India it reduces death rate considerably. Though, birth rate remains constant the reduction in death rate widens the distance between the two rates; which ultimately affects the total rate of growth of population. So, while estimating labour product we have to account for these effects of investment on health.

Between 1951 and 1961, as seen above, population increased by 21.5 per cent. This growth rate was higher than the growth rate of 13.3 per cent in the previous decade 1941-51. This is primarily due to decrease in death rate without much change in the birth rate demonstrating the second stage of demographic transition theory. As we have seen earlier, during 1951-61 the increase in labour force was of the order of 35 per cent. Assuming that in the absence of any investment in health, the labour force as well as population increased by 13.3 per cent (the growth rate of population during 1941-51), the labour force in 1961 would have been 157.5 million and population 409 million as against 188 million and 439 million respectively. The difference between two labour force figures(i.e. 139 million and 157.5

million) of 18.5 million is the labour product produced by the increase in health care during 1951 and 1961. Following the same procedure of estimating the growth of labour product, we come to a figure of 25 million in 1981. The labour/product thus measured accounts for 10 per cent of the actual labour force.

Table: 7.III

Real Value of Labour Product

Year	Real health cost per Unit of L.F. (Rs.)	Labour Product (Million)	Total Value of Labour Product (Rs. million) (2+3)
1	2	3	4
1960-61	10.65	18.5	197
1979-80	22	25	550
Percentage Change	-	-	9

Source : Derived from Table No.7.II

Labour product can be converted into real terms by multiplying it by real per capita or per worker health expenditure. It was Rs.10.65 in 1960-61 and was Rs. 22 in 1979-80. The real value of labour product in 1960-61 worked out to Rs. 197 million and in 1979-80 it came to 550 million giving an annual increase of around 9

11 per cent per annum. The real value of labour product forms 42 per cent of total investment in health expenditure in 1960-61 and 38 per cent in 1979-80. In other words, the health capital/output ratio in 1960-61 was 2.4 and in 1979-80 it was 2.6. To produce one unit of output we need 2.4 to 2.6 units of health capital.

III

Conclusions

(1) The term health in our study has limited connotation, in the sense that it covers only expenditure incurred on preventive and curative health services. Like expenditure on education, health expenditure has shown a phenomenal increase during planning in India. At current prices, it gives an annual increase of 78 per cent and at constant prices the rate of increase works out to 25 per cent per annum. Public expenditure on health in 1950-51 accounted for just 10 per cent of the total expenditure. After 30 years of planning the share of state in health expenditure was 1/3rd as against the 2/3rds share of the private sector.

(2) Expenditure on health is viewed as investment expenditure. This investment raises the capabdilities of persons as productive agents. So, while estimating the human capital formed through investment in health, we have tried to estimate simply the addition to the labour product. Since we do not get seperately the

.12 expenditure on health incurred on the persons in the labour force, we have assumed that the expenditure on health of a person in the labour force is the same as per capita expenditure on health in the country. (Total health expenditure divided by total population). This helped us in estimating the absolute health expenditure incurred on labour force as a whole. It was found that the share of health expenditure incurred on the labour force is as high as their share in the total population. Both during 1951 and 1961 and 1971 and 1981 the growth of the labour force has been faster than that of the population growth. Obviously part of this rapid increase in the labour force can be attributed to the investment in health. In the absence of the investment in health, the labour force would have grown during 1951-61 and 1971-81 by the same rate that prevailed during the decade 1941-51 (the rate of growth of population was 13.3 per cent). On the basis of this growth rate the labour force in 1961 worked out to 157.5 millions as against the census figure of 188 millions. During the period 1951-61 on this basis there was a net addition of 18.5 millions to our labour force. To express this/the into monetary equivalents we have multiplied this addition of 18.5 millions by the real per capita expenditure on health. This gives the magnitude of the health capital of Rs. 197 million in 1960-61. Similar exercise has given us the

13 health capital of Rs. 550 millions in 1979-80 an increase of nearly 3 times over twenty years period. Thus, health capital seems to have increased in real terms as fast as the educational capital. Both the types of human capital have shown a faster rate of growth than the growth rate observed for the physical capital formation in India.

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References

1. Selma J. Mushkin. Health as Investment.Journal of Political Economy. Vol. 17. 1962. pp.129-57.

2. Ibid. pp. 132-133.

3. Ibid., pp. 136.

4. Ibid., pp. 136.

5. Census of India. 1981. Registrar General of Census. Government of India, New Delhi.