CHAPTER VII

SUMMARY OF FINDINGS AND CONCLUSIONS
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This chapter presents the summary of findings of the study. Policy implications that can be derived from the analysis are also indicated.

7.1 Summary of findings.

The overall objective of the study is to evaluate the impact of the health care variables and the utilization of health care services in Coimbatore District of Tamil Nadu state. This study hypothesizes that the economic status determines the Utilisation of health care services provided by the public agencies.

To understand the growth and development of supply side variables of health care in Tamil Nadu, the secondary data related to the indicators of health status namely (i) Birth rate, (ii) death rate, (iii) life expectancy and (iv) infant mortality rate and health care services namely (i) number of doctors, (ii) number of nurses, (iii) number of medical institutions, and (iv) number of beds were analyzed. The compound growth rate was calculated for these variables. The analysis of growth rate enables the researcher to understand the compounded increase in these variables during the nineteen-year period from 1981 to 1999. It was found that the growth rates of all the variables are positive. It indicated that while the growth rates of number of medical institutions and number of beds were increasing at an increasing rate, the growth rates of number of doctors and nurses employed in the medical institutions were increasing at a decreasing rate over the period of study. The study found that the number of doctors in the medical institutions did not increase along with increase in the number of medical institutions. While the medical institutions registered a compound growth rate of 14.78, the number of doctors showed a compound growth rate of 3.8. Among the institutions of rural health namely PHC's SC's and
CHC’s in Tamil Nadu, it was found that while CHC’s displayed a compound growth rate of 19.78, whereas PHC’s and SC’s registered a growth rate of 12.16 and 5.42 respectively in Tamil Nadu during the study period. The increase number of CHC’s and PHC’s appears to have contributed for the decline in death rate and infant mortality rate.

As regards the growth rate of health care services in Coimbatore, it was found that number of hospitals and doctors registered a compound growth rate of 18.33 and 14.77 respectively, whereas the outpatients, and inpatients treated increased at a compound rate of 0.35 and 0.57 respectively. This indicates the declining trend in number of the patients visiting the government hospital. The general opinion among the public is that the facilities and treatment offered in government hospital is not up to the mark. The existence of bribery too drives away the prospective patients belonging to lower income category from the government hospital.

An attempt was made to estimate the factors determining the health. It was assumed that the supply side variables of health care determine the health indicators. In this study four indicators of health have been considered. They are (i) birth rate, (ii) death rate, (iii) life expectancy and (iv) infant mortality rate (IMR). The determinants identified were the number of doctors, number of nurses, number of medical institutions and number of beds. An attempt was made to study the influence of per capita income on the indicators of health also.

To identify the determinants of the indicators of health care each were regressed against a vector of supply side variables of health care. With regard to death rate function, it was found that the number of doctors is inversely influencing the death rate in both linear and log linear estimations. The death rate was found to be decreasing by 0.000183 units and −0.6524 units in
the linear and log linear estimations respectively. In both the cases the parameter emerges statistically significant at 95 percent level.

In order to understand the determinants of birth rate, the same set of variables, which were used in the death rate, were regressed against birth rate. It was found both in the linear and log linear estimations the number of doctors significantly contributes for the decline in the birth rate. This implies doctors in the backward area directly or indirectly engage in birth control measures.

In order to study the impact of the vector of supply side variables in the health care services in Tamilnadu, multiple regression models based on OLS principle in linear and log linear form were estimated. In these models, once again, the number of doctors alone is found to be significantly influencing the IMR. Though number of nurses and beds are also found to be inversely related with IMR they were not found to be statistically significant.

The life expectancy is hypothesized to be a function of the supply side variables of health care. To understand the behaviour of life expectancy for a given change in the independent variables, multiple regression both in the linear and double log form were estimated. In both the estimations the number of doctors was found to be positively influencing the life expectancy in Tamilnadu. The life expectancy was estimated to increase by 4.702E-04 units and 0.3708 units in the linear and log linear estimations respectively for one unit increases in the number of doctors.

Percapita income in any country is a crucial variable that would determine the health status. When percapita income increases the propensity to spend on medicare may also increase. Therefore income is hypothesized to influence significantly the indicators of health status. In order to test this hypothesis percapita income was run in the linear regression along with other
supply side variables. It was found that percapita income negatively and significantly influence birth rate and IMR. In the case of death rate the coefficient of percapita income was negative which conforms to the model specification. But it does not emerge statistically significant. These analyses enable the researcher to infer that the number of doctors and the percapita income are the crucial variables that determine the health status in Tamilnadu. This validates the hypothesis made earlier.

In order to understand the utilization behavior of health care services of consumers separate, analysis was carried out in the developed blocks and the backward blocks. The Utilisation was measured in terms of awareness of the number of departments available in the government hospital. In both the areas it was found that Low and Very Low classes who were in greater need for free health services were not aware of the services available in the Government Hospital. It was also found that the utilisation of public health services by the Low and Very Low classes is limited to the out patient department. The Middle and Higher social class group mostly use the specialized department during the last five years.

To understand the Utilisation of specialized departments in the government hospital six special departments were considered. They are (i) Cardiology, (ii) Thoracic, (iii) Cancer, (iv) Orthopedic, (v) Psychiatric, and (vi) X-Ray /Scan.

It is found that in the developed block, 20 percent know all the nine departments in the higher social strata. In the Very low and Low social class it was found that they were aware of four and less than four only. Nearly 65 percent of the Middle class households were having knowledge of 5 and less than seven departments. It proves that knowledge of departments in the general hospital increased with the rise of social class position. In the backward block a majority of the Middle class respondents were aware of five or more departments. Nearly 83 percent of
Very Low class respondents knew only one to three departments. Another interesting finding is that 7 percent households knew nothing.

Regarding the departments visited after assessing the knowledge of different social classes regarding the available health services in the general hospital, one has to analyse whether these people have visited any departments in the general hospital either as a patient or as a visitor. Most of the respondents from all the four social strata have visited only the outpatient department. Nearly 33 percent of the households from Middle and High class visited the other departments than the outpatient departments. In the backward block nearly 80 percent of the households visited only outpatient department. Very few cases visited cancer and x-ray/scan departments.

In order to understand the utilisation of specialized health care services, six specialized departments were considered. In the developed block nearly 73 percent were found not utilizing any department other than the outpatient department. Among the users High and Middle classes utilized more departments, than Low and Very Low class. In the backward block also nearly 77 percent did not utilize specialized departments. Here also High and Middle class utilize specialized departments more than the Low and Very Low classes. It is found that orthopedic, and cancer department were mostly used.

As regards the non-utilisation of health care services in government hospitals, it would be interesting to find the reasons for non-utilisation in developed and backward blocks. In the developed block most of the households from all the four social classes did not need the health services from the six departments. In the Very Low class nearly 25 percent were not having knowledge about the departments available in the public hospital. In the Low social class also nearly 16 percent were ignorant. This is because of their lack of awareness and poor educational
levels. Few households from Middle, Low and Very Low social classes responded saying that doctors in the out-patient department did not refer them to the special departments. In the backward block also nearly 75 percent did not utilize all the six departments. Here also from Middle, Low and Very Low classes were found unaware of the departments to the extent of 7 percent, 18.5 percent and 25 percent respectively. It is found that in both the classes, most of the households did not know the departments available in the government hospital. When compared with backward block, the developed block households were found utilizing the specialized departments in greater proportion.

In order to understand the utilisation of private health care services, private health centers are divided into two. They are hospital and clinic. In the developed block all the High and Middle class households were found to have visited private health centers. Nearly 38 percent of Low and Very Low class utilized private health care services. In the backward block the High and Middle class households were the main consumers of private hospital services and none of the private hospital during the last five years.

With regard to the reasons for going to private health centers following variables have been considered, (i) good treatment, (ii) proximity and less crowd. In the developed block nearly 37 percent preferred good treatment, 25 percent suggested proximity and 15 percent was found preferring private care for avoiding crowd and delay. In the backward area also all the four classes were found to be utilizing private health centers though marginally for good treatment and the proximity of the private health center.

The study also focused on the utilisation of government and private health care services. In the developed block 61 percent of the households were found utilizing both the services. This is found to be maximum viz., 80 percent among the Low class followed by Middle
class. None of High and Middle class sought health services from the government health centers alone. In the backward block 42 percent of the households utilized both services. The number of those who utilized the government health services alone increased with the decline of social class position.

Inequality has existed in some form or other in all societies. Some have greater access to societal resources while some have no access to them. In this study inequality in the utilisation of health care has been considered. Most specifically it analyses the inequality existing in the developed and backward blocks in Coimbatore district. To understand this Lorenz curve technique and Gini Ratio were used. In this study it is hypothesised that inequality in income, disparity in immunization, inequality in the number of visit to government hospital, and disparity inequality in the number of days stayed determine the inequality in the utilization of health care services. The Gini coefficients of income inequality were estimated to be 0.41 and 0.507 for developed and backward blocks respectively. The Gini coefficient for immunization inequality is worked out to be 0.027 for the developed blocks 0.245 for backward blocks. This enables one to infer that the children in the developed block are better immunised due to the income level than the children in the backward blocks.

The inequality is more pronounced in the case of immunization. It implies that the current steps taken by the government to have 100 percent immunization has not reached the backward blocks. The inequality in the number of times visited for prenatal care in terms of Gini coefficient is 0.227 for developed blocks and 0.493 in the backward blocks. It means, that inequality in the utilisation of health care services is more pronounced in the backward blocks of Coimbatore district. The estimated Gini coefficient for the inequality in the number of days stayed in government hospital for natal care is 0.307 and 0.613 for developed and backward
blocks respectively. Here again the backward blocks have not been found to be utilizing the health services effectively.

There are three categories of factors that influence the utilisation of health care services. (i) Demographic factors like sex, age and marital status, (ii) socio-economic factors, such as education, occupation and income, (iii) cultural factors like influence of relatives, friends and neighbours. Some external factors such as medical organization and perception of symptom and disease affect the utilisation pattern. The hypothesis was that there is inequality in the utilisation by gender and by income groups. In this study the demographic factors and socio-economic factors were considered for analysis. With regard to gender the researcher has made a hypotheses that females are utilizing more health services than the males. This aspect is analyzed separately for the developed block and the backward block. In the developed one it was found that a total of 137 cases of male, constituting a percentage of 38.5, and 219 cases, which form 61.5 percent of females found utilizing the health care services. More number of females belonging to all categories of social classes was found to be utilizing health care services. In the backward block 68.5 percent of females in total samples were found to be utilizing the health care services. Women belonging to Very Low and High social class were found to be utilizing more than the women belonging to other social classes. This proves the hypothesis that the females are utilizing the health care services more than the males.

Most of the diseases occur among the children and the aged. So the health care services are utilized most by the people belonging to this category. The researcher has made a hypothesis that the children and the aged utilize the health care services more. In the analysis it was found that 46.2 percent of the consumers belonging to the age group below 5 and 28 percent fall in the category of age above 50 in the developed block. Similarly 46 percent of the people
who utilize health care services belong to the age group below 5 in the backward block where as 31.3 percent belong to the age group above 50. This analysis proves the hypothesis made earlier that children and aged utilize the health service.

Marital status is another factor that influences the utilization of health care services. Nearly 67 percent of the people utilize health care were found to be married in the developed and 67.4 percent in the backward block. This again proves the hypothesis that the married utilized the health care more.

Among the economic factors income, education and occupation are the important ones. The researcher found the maximum number of visits was found to be 8 in the case of developed area and 6 in the case of backward area. Moreover in the backward area greater proportion of people belonging to Low and Very Low group was found visiting three times whereas people belonging to Higher income group were visiting above five times. In the developed block also similar tendencies were noticed. Therefore the researcher infers that the Low social group category people visit less number of times than the Middle and Higher social group.

With regard to education the researcher has taken into consideration the mother’s education only. The hypothesis is that higher the level of education of the mother the lesser is the size of the family. It was found that 45.5 percent of women with higher education has children less than 3. Nearly 62 percent of illiterates and 71 percent with primary middle education were found having 4 to 5 children. None of the women with higher education were found having children higher than 6 where as 18.7 percent of the illiterate had children 6 and above. This proves the hypothesis of the study.

In the developed block nearly 27 percent of the illiterates is found to be having children less than 3. This value is higher than the corresponding figure in the backward block. This
shows that even though women are mostly illiterate they understand the importance of small family norm in the developed block and it was found that educated women prefer having less number of children. This upholds the hypothesis that educated women prefer smaller family.

Health expenditure is also another variable that determines the health status. The level of mother’s education is also an important determinant in the developed block. Nearly 90 percent of the illiterate mothers spend below Rs.300 per month. In the developed block more than 30 percent was Rs.1000 and more. This is for their preventive care. Nearly 15 percent of the Very Low and Low classes were found to be spending Rs.1000 and above. But these groups were spending only for the curative care. It was found that higher educated women spend more for preventive care than the curative care.

In order to understand the awareness factors viz., mother’s education, the knowledge of preventive care and curative care has been taken for analysis. In the developed block among the illiterate only 20 percent was found having the knowledge of preventive care, in the primary / middle level this percentage was only 30 percent. In the secondary / higher secondary level 80 percent was noted to be having preventive care knowledge and this level goes upto 98 percent. Thus the higher the mother’s education the higher the knowledge of preventive care. Therefore the researcher infers that educated mothers have more awareness in the preventive care.

Occupation is another factor determining the level of utilisation of health care services. This is also tested with respect to prenatal care. Regular employees are utilizing natal care more number of times than the people engaged in casual work. In the developed block, it is found that regular employee and self-employed in non-agriculture were found utilizing more number of times than the other. Nearly 55 percent of the regular employees visited six and more than six times, while agriculture and non-agriculture labourers visited less than four times. In the
backward area the maximum number of times visited was only six. In the regular employee group, nearly 50 percent was found to be visiting five and less than six. In the non-agriculture/industrial workers group, 30 percent was noticed to be visiting five and less than six. It is found that regular employee utilised prenatal care more number of times than the other.

Regarding the adoption of family planning, in the developed area, among the illiterate, only 68 percent was noticed to be adopting family planning. In the primary/middle educated group it increased to nearly 80 percent. In the sec/higher sec group and in the Higher education group it formed 90 percent. This proves the hypothesis that educated mothers adopted family planning method in early reproductive age to reduce the size of the family.

Regarding the method of adoption of family planning and mother's education in both the areas most of the mothers are found to prefer IUD and condom method. Educational level determines the users of IUD. Higher education mothers preferred IUD method. In this study it is prove the hypothesis that education level and adoption of family planning are directly related.

In the developed area 25 percent from illiterate 35 percent from primary/middle, 45 percent from secondary/higher sec and 46 percent from Higher educated households are using IUD method. It is also found that more of less educated mothers are using condom, because of propaganda and cheap method. In the backward block nearly 42 percent adopted condom method, 23 percent was adopting IUD, and 15 percent was adopting female sterilization method. It is also found that educated mothers prefer IUD method than the other.

In order to understand the mother's age and family planning adopted, the chi-square test is employed. In the developed block nearly 96.5 percent of the mothers adopted family planning in the age group of 21 to 25. Nearly 93 percent in the age group of 31-35 was found to be...
adopting family planning. Further 80 percent belonging to age group 36-40, 34 percent of the age group 41-45 and 7 percent in the age group 50 and above was found adopting family planning. In other words nearly 95 percent belonging to the age group 21-40 was found adopting family planning.

In the backward block between the age groups of 21-25, 26-30 and 31-35 nearly 50 percent was found to have adopted family planning. And the other groups adopted less than 30 percent. It is found that in the developed area nearly 37 percent of people below 30 years of age have been found adopting family planning and nearly 27 percent of the respondents who adopted was in the age group 31 to 40. In the backward area it was 20.6 percent and 9 percent for group below 30 and group 31 to 40 respectively. Both in the developed and backward block more number of adopters was from the age group 21 to 30.

Next utilization behaviour of health care is analyzed. In this study utilisation behaviour was treated as a function of economic factors and educational factors. Utilisation behaviour was measured by three factors namely, (i) willingness to pay for government health care services, (ii) the nature of treatment availed (preventive/curative), (iii) frequency of visiting government hospitals. Willingness to pay was analysed separately for the developed and the backward blocks.

In the developed block family income, opinion about government hospital and cost of delivery were found to be significant. They are inversely related also. In the backward blocks too the family income, number of cases availed in a household were found to be significant and are found to be inversely related. This finding proves the hypothesis that higher income people are not willing to pay for the government services. The second hypothesis is the NCAHS and willingness to pay are inversely related. The findings of the study prove this hypothesis. In the
backward block higher health expenditure was found to be positively related to the willingness to pay.

With regard to the curative health care, household size and mother’s education were found to be significant variables, while household size is found to be positively related to the curative expenditure, mother’s education is inversely related to it. This establishes the hypothesis that the level of mother’s education and preventive care are positively related. In the developed blocks health expenditure and father’s education are statistically significant. This finding proves the hypothesis that economic and educational factors positively influence the preventive medical care.

The third measurement of the utilisation of health care was the frequency of visiting the government hospital. It was found that family income, opinion about government hospital and priority of medical expenditure are the significant variables. Family income is negatively related to the number of visits to government hospital. Opinion about government hospital is positive and highly significant. Priority to the medical expenditure is positively related to the number of visits to government hospital in the backward block. In the developed blocks health expenditure, family income and mother’s education are inversely related. This proves the hypothesis that the level of the income and the level of mother’s education are inversely related to the number of times people visit government hospitals. It was also found that when the opinion about the government hospital improves the number of times people visiting government hospitals also increases. Thus, it has been proved that the income of the family, mother’s education and opinion about government hospital determine the choice of the people with regard to public and private health services.
7.2 Policy Suggestions

The findings of the present study have specific policy implications and they are listed below:

1) The growth in the number of doctors was not commensurate with the growth of hospitals in Tamilnadu. This adversely affects the utilisation of health care in Tamilnadu. Institution without adequate doctors is seen to be a wastage of resources. The health for all 2000 is a right step to promote the health care services in Tamilnadu. Therefore the government should take adequate measures to increase the number of doctors and they should be widely dispersed.

2) Despite the increases in the number of people adopting family planning it is not satisfactory in the backward block. The promotion and efficient utilisation of the PHC’s SC’s and CHC’s would favourably affect the both birth-rate and death-rate. Authorities should concentrate in this direction.

3) It was found that Very Low and Low social classes utilise the government hospital only on out-patient basis, and people belonging to Middle, Higher social classes are found utilizing the specialized wards more. This is viewed as the inequity. Therefore steps must be taken to create awareness about the specialized facilities available in the government hospital through basic education and mass media.

4) The major reason for the under utilisation of the public health care services is mainly due to the inefficiency in the provision of such services. If the ills plaguing the public health services centers were removed more people belonging to lower social class would utilise the services better.
5) Mother's education is found to be a determining factor in the utilisation of health care services. Therefore steps must be taken to remove the obstacles to female literacy. The female literacy programmes should be increased and be made more effective in order to eliminate the disparity in the utilisation of health care services. It would also help the utilisation of preventive health care.

6) Regularly employed persons were found utilizing public health care services better than the casually employed people. Therefore steps must be initiated to create regular employment opportunities for the people so that the inequalities in the utilisation of health care services would be removed.

7) The adoption of family planning gets affected due to the ignorance about the family planning devices and methods. The cost of the devices also accounts for non-adoption of family planning. The prices of these devices should be brought down so that it is within the reach of the less privileged classes.