Chapter - III

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Adequate health and nutrition status of individuals is, both, an end in itself and a means to promote the productive potential of the population in the interest of economic development.

The concept of nutritional status has undergone considerable change over the years; it is no longer understood simply as the outcome of deficiencies or excesses of one or more essential nutrients. It is well recognized today that nutritional status cannot be viewed independently of health status, as there are complex biomedical relationship between and individual's food intake, nutrient absorption and utilization by the body, individual activity levels and the incidence of diseases. In many LDCs, including India, nutrient absorption and utilization by the body are less efficiently carried out because of the presence of frequent infectious episodes like diarrhea, upper and lower respiratory infections. Malabsorption can also result from intestinal parasites. Infection causes nutrition status to deteriorate; at the same time under - nutrition decreases resistance to infection - a synergistic relationship. Thus, the term nutritional status is used, at the very least, to describe an outcome of several biomedical processes interacting over time. A child’s growth rate reflects, better than any other single index, his state of health and nutrition, and often indeed his psychological situation also. Similarly the average value of children’s heights and weights reflect accurately the state of a nation’s
public health and average nutritional status of its citizens, when appropriate allowance is made for differences, if any, in genetic potential. This is especially true in developing and disintegrating countries. Systematic variations in anthropometric outcomes, like weights and heights, among populations have been largely attributed to the social, economic and environmental conditions in which people live. A combination of poverty, ill health and deprivation can result in lower growth, weights and heights. This is a phenomenon observed internationally; of course, heredity also plays a crucial role. Anthropometric measurements are always outcome of, both heredity and the environment in which children grow. However, repeatedly, international data have demonstrated that variations in growth within very broad racial groupings can primarily be attributed to the effects of the conditions in which populations live. It is well accepted among nutritionists that, at least in the 20th century, differences between socioeconomic classes caused greater differences between growths of children than differences due to ethnic factors across countries. Thus, the more deprived the population (in terms of access to nutrients, infection loads, hygiene, and even care and attention) the lower are weight and height outcomes likely to be. This is particularly true of developing countries, demonstrating significant correlations between socioeconomic status, living standards and human physical states. Consequences of inadequate health and nutrition are poor physical and
mental growth, illness and death. In terms of organized child care services, the objectives are providing adequate nutrition to economically disadvantaged children, to improve the health and nutritional status of children and develop their mental and physical ability, to reduce infant mortality because of mal-nutrition and disease and to increase the enrolment in schools and to reduce dropouts.

There have been significant improvements in the overall nutritional and health status of the population in Tamil Nadu over the last two decades with a steady reduction in the percentage of underweight children and severely malnourished children, better early childhood care for survival, growth and development and better nutritional status of pregnant and lactating women. The percentage of children with low birth weight has come down from 17.5 in 1997 to 15 in 2001. In terms of economic development consequences like inadequately skilled labour, absenteeism, avoidable expenditures on curative services and low productivity lead to high costs for any economy. In recognition of this the Government of Tamil Nadu have put in place a network of services and infrastructure for health and direct nutrition interventions. Tamil Nadu has also benefited from its relatively developed position as compared with other states in India because of which there is a general upward trend in the overall health and nutritional status of the population.
Statement of the Problem

Nutritional status is one of the indications of the overall well being of population and human resources development. Tamilnadu has a long history of reducing the properties of moderately mal-nourished (Grade II) and severely malnourished (Grade III and IV) from 12.32% to 7.4% and 0.8% to 0.2% respectively. As Tamil Nadu has already established a lead in the country by taking steps for improving access of children and expectant mothers to nutrition, the aim of the Government is now to consolidate this position and become the first state in the country to provide a whole lifecycle Nutrition security programme for those below the poverty line with special focus on nutrition for expectant mothers, infants and the aged. Integrated Child Development Services (ICDS) is one of the most comprehensive programmes for providing integrated health, nutrition and education services; supplementary nutrition, non-formal pre-school education, immunization, health check-up, referral services, nutrition and health education. The present study attempts to analyse the impact of Integrated Child Development Services on the nutritional and health status of children in Kanyakumari District.

Study Area

Primary objective of this research is to study the impact of Integrated Child Development Scheme on the Nutritional and Health Status of Children in Kanyakumari district. There are nine development blocks and four municipal towns in Kanyakumari district.
Development Blocks are falling under the administration of Rural Development and Panchayat Raj Department of Government of Tamil Nadu and the Municipal Towns are under the administration of Municipal Administration of the Government. Implementation and execution of the scheme may differ due to two different administrative agencies. Also, to keep the research manageable to an individual researcher, there is a need to restrict the area of the study. Hence, in this study, the four municipal towns have been excluded. Therefore, the nine development blocks of the Kanyakumari district constitute the study area for this research. However, the development blocks have village panchayats and town panchayats within their administrative jurisdiction and those town panchayats are also covered in this study and treated as urban.

**Objectives of the Study**

1. To review the existing child development schemes in Kanyakumari District.

2. To examine the working of Anganwadi Centers (AWC) in the study area.

3. To study the impact of Integrated Child Development Scheme on the nutritional and health status of the children in the study area and

4. To offer suggestions for betterment of the scheme to children.
**Universe and Respondent**

Universe for this study include all children registered at the Anganwadi centres in the nine development blocks of Kanyakumari district and Family of each child registered at the Anganwadi centre is treated as the respondent.

**Sampling Frame**

List of registered children in the registers maintained at the Anganwadi centres is used as the sampling frame for this study.

**Sampling Techniques and Sample Size**

To avoid bias, sample should be selected randomly and such that the sample units fairly represent the universe for the study. Across the nine blocks of Kanyakumari district, there are a total of 1409 Anganwadi centres. Among them 50 centres are selected using simple random sampling methods, under the assumption that they may not differ much with respect to the quality in delivery of the welfare measures at these Anganwadi centres.

The sample size was decided as 500 as a rule of thumb and from each selected Anganwadi centre 10 children were selected from the Anganwadi Register, using a simple random sampling method. The families of selected children are the sources of primary data for this study. There was no need to replace any selected child, as all the families fully cooperated with the researcher.
Method of Data Collection

Personal interview with a prepared schedule method was used to collect the primary data. Though this method was time consuming and costly, it was used because it provided an opportunity to the researcher to understand the field condition on the impact of the Integrated Child Development Scheme on the Nutritional and Health Status of Children besides the data collected from the sample respondents. The researcher was able to pay personal attention to the convenience of the respondents and also to provide additional information if any required by them to keep them motivated to respond. Selected respondents were visited personally and interviewed to collect required data. Primary data were collected with the help of separate, structured and pre-tested enquiry schedules prepared in consultation with the guide and other experts in such studies.

Enquiry Schedules

Enquiry Schedules had 8 parts: (I) identification, demographic and personal details of the respondents; (II) Details on their social background (III) Details relating to the Immunization Status of the Child, (IV) Details relating to the Anganwadi Centre, (V) Details relating to the distribution of Nutritional Supplements at Anganwadi, (VI) Details relating to the Illness, (VII) Details relating to the family income and (VIII) Details relating to monthly household expenditure.
**Pilot Survey**

By reviewing past studies a long list of statements describing each attribute was prepared. Services of seven experts were used to remove statements that were less relevant or redundant.

Finally, retained statements were put to test with 20 respondents. The difficulties of the respondents in understanding and responding or time required to respond were observed. Some statements required rewording, some others had to be dropped without loss of any information sought and replaced with new statements. This exercise was done in a pilot survey by personal interview method.

After this exercise, all relevant statements were included in the enquiry schedule and it was finalized. Care was taken to exclude the sample respondents of pilot survey from the samples and for primary data collection.

**Test for Validity**

The validity of data collected determines the quality of analysis and the confidence that could be had on the value of the estimates. Therefore, the instruments - enquiry schedules used for the study- were tested for validity by a critical review by experts in research methods and all redundant and ambiguous details were removed.

The reliability coefficient computed using Corn Bach’s Alpha for the schedules designed for this study is 0.79, which ensures the reliability of the schedules. Hence, the schedules were used for collection of primary data. The Enquiry Schedule is presented in Appendices (No.II).
**Statistical tools and techniques used**

Statistical methods are a mechanical process especially designed to facilitate the quantitative data. In this study, various statistical tools have been applied like percentages, classifications, Chi-square test, Pearson's Correlation co-efficient (Correlation matrix) and a logit model.

**a) Chi-square text**

The chi-square test was used to determine goodness of fit of observed and expected frequencies.

The Basic computational equation for chi-square test can be given as:

\[ \chi^2 = \sum \frac{(Observed\ Frequency - Expected\ Frequency)^2}{Expected\ Frequency} \]

When there is only one degree of freedom, an adjustment known as Yates correction for continuity must be employed. To use this correction, a values of 0.5 is subtracted from the absolute value (irrespective of algebraic sign) of the numerator contribution of each cell to the above basic computational formula. The basic chi-square computational formula then becomes.

\[ \chi^2 = \sum \frac{(Observed\ Frequency - Expected\ Frequency/0.5)^2}{Expected\ Frequency} \]
b) **Correlation Matrix**

For analysing the factors influencing the health status of the children, however there is a possibility of the presences of multicollinerarity among the independent variables and hence, Pearson’s simple correlation has been run and the coefficients are provided in the form of correlation matrix.

c) **Logit Regression Model**

In order to assess the impact of Socio- economic and ICDS related variables on the health status of sample children a logit model has been used.

The standard form of the model is

\[ HE = a_0 + a_1AG + a_2B0 + a_3ME + a_4OF + a_5TF + a_6H + a_7ND + a_8SI + a_9MF + a_{10}DBF + a_{11}FF + a_{12}NA + a_{13}MAN + a_{14}MI \]

**Hypothesis of the Study**

1. Breast feeding is more popular in rural areas than in urban areas.
2. ICDS organised Immunization Programe is highly effective.
3. Children attending regularly the services provided by Angamwadi Centre are gaining height, weight and health.
4. The Anganwadi Centres are fully equipped with to make available the facilities expected from them.
5. A strong correlation exists between Socio-economic factors and health related ICDS variables.
Limitation of the Study

1. The very nature of the topic itself is such that the scholar has to rely on primary data only.

2. The scholar has tried to collect data by cross checking through possible sources, further; it was not able to re-check the data.

3. The respondents had to recall certain information from their memory which could have caused the "recall biases"

Chapter Scheme

The dissertation is presented in seven chapters.

The first chapter deals with an introduction to the present study.

Second chapter is devoted to a survey of past studies related to the present study.

Third chapter is concerned with the methodology adopted in the present study.

Fourth chapter is presenting the profile and scope for the health sector and ICDS in the study area.

Fifth chapter draw an overview of ICDS in India and Tamil Nadu.

Sixth chapter attempts at an analysis of the Socio-Economic, Health and Nutritional status of the sample children; The hypotheses also tested.
Last chapter gives a summary, findings, conclusions and suggestions of the study.

The last chapter is followed by the Bibliography and Interview schedule.