REVIEW OF RESEARCH

ISSN: 2249-894X
IMPACT FACTOR : 5.2331(UIF)
VOLUME - 7 | ISSUE - 1 | OCTOBER– 2017

EFFECTS OF SOCIOECONOMIC STATUS ON THE NUTRITIONAL AND HEALTH STATUS OF SELECTED ELEMENTARY SCHOOL CHILDREN AGED 6 – 10 YEARS IN RAMANATHAPURAM DISTRICT OF TAMILNADU STATE

Dr. Sushila James[1] and N. Jeba Sowpackia Rani[2]
[1]Rtd. Prof and Head, Department of Child Development, Sri Meenakshi Arts and Science College for women, Madurai, Tamil Nadu, India.
[2] Principal, United Matriculation School, Ramanathapuram, Tamil Nadu, India.

ABSTRACT:
As Socio economic condition plays a main role in the assessment of Nutritional and health Status of Children of Ramanathapuram District Questionnaire to list out the parent education, occupation and income was prepared. . I want to compare them between Government and Matriculation school . One hundred students from each streams had been selected randomly. From 5 Government and 5 Matriculation schools (10 children from each streams) Two students/class from I to V(1 boy and 1 girl/class). When matched Matriculation school children's parents educational, occupational and income were higher than that of Government school children's parents. Their expenditure under various heads were calculated and found that Government school parents spent more on medicine (11.88%) whereas Matriculation school children on education(8.25%). When dietary intake was correlated Matriculation school children had a better intake of calories, protein and fat. When BMI was measured it was confirmed that nine percent of matriculation children children were healthy and only two percent of Government school children were healthy. Haemoglobin level by cyanmethaemoglobin method was examined. Matriculation school children of 31 percent were in the range of 10-12 mg/dl and the same percent found below 7mg/dl in Government school children.

KEYWORDS: Economic profile, Expenditure pattern, Nutrient intake, Anthropometry, Haemoglobin.

INTRODUCTION:-

Children are the future leaders of a community and the true welfare of a community depends upon their health and welfare. As pointed out in our National Policy for Children 1974, the Nation's children are its supreme asset. The future well being of a nation depends upon how best its children grow and develop. School age, also known as middle childhood (6-10 years of age) is the fourth developmental stage in one's life span after infancy, toddler and preschool stages. In this transition phase between childhood and adolescence marked by the active growth and development. (Klieman RM et al,2008)

Socioeconomic status is a measure of an individuals or family's economic and social position in relation to others, based on various variables responsible for that like income, education, occupation, family effluence, etc. Socioeconomic status is an important determinant of health and nutritional status as well as mortality and morbidity.(Dr.Chinta ankitha et al,2016). Wealth reflects intergenerational

transitions as well as accumulation of income and savings (Gaur KL,2013)

Good nutrition is essential for survival, physical growth, mental development, performance, productivity, health and well-being across the entire life span: from the earliest stages of foetal development, at birth, and through infancy, childhood, adolescents and on into adulthood. Under nutrition affects the human life and it is particularly harmful in early age groups i.e childhood. Adequate and appropriate food is essential to promote and maintain tissue growth , and to regulate body processes. Therefore food supply is necessary to meet the requirements for children's body.

The characteristics of good nutritional status are an alert, good-natured personality, a well-developed body, with normal weight for height, well-developed and firm muscles, healthy skin, reddish-pink colour of eyelids and membranes of mouth, good layer of subcutaneous fat, clear eyes, smooth and glossy hair, good appetite and excellent general health. General good health is evident by stamina for work, regular meal times, sound regular sleep, normal elimination and resistance to disease.

Inadequate nutrition may lead to malnutrition, growth retardation, reduced work capacity and poor mental and social development.(Manna et al 2011). Among all age groups, the school age period is nutritionally significant because this is the prime time to build up body stores of nutrients in preparation for rapid growth of adolescence (Sati et al,2012)

Poor nutritional status is evidenced by a listless, apathetic or irritable personality, undersized, poorly-developed body, abnormal body weight, small and flabby muscles, pale or sallow skin, too little or too much subcutaneous fat, dull or reddened eyes, lusterless and rough hair, poor appetite, lack of vigour and endurance for work and susceptibility to infections. Poor nutritional status may be the result of poor food selection, irregularity in schedule of meals, work, sleep and elimination.

Dimpal arora et al,2014 enlisted that poverty, low literacy rate, large families, food insecurity, food safety appears to be the important factors responsible for poor health status of children from low socio economic class. Lack of inadequate nutrition may causes double burden to the pre-natal, infant and young child due to exposure of energy dense, high fat, poor micronutrient and poor physical activity(Rema N et al,2011)

Primary school children are more likely to be undernourished than Preschool and Secondary school children (Lahiru Sandauwan Galgamuva et al, 2017). According to WHO criteria, fifty-two percent of young children in underdeveloped countries are considered normal, while 48% of them are malnourished and 10% of them are severely malnourished. Assessment of nutritional status of an individual is important and approach to nutritional assessment involves anthropometric observations, biochemical tests, clinical observations and diet evaluation.

PURPOSE OF THE STUDY:-

The main objective of the present study is to probe in to the effects of various socioeconomic factors on the nutritional and health status of children aged 6 – 10 years, residing in Ramanathapuram district of Tamilnadu, State.

The study was conducted in ten Government and ten Matriculation schools. One hundred students were randomly selected from the ten schools in each stream, making the total sample size two hundred. Ten students were randomly selected from each of the ten schools (Government and Matriculation streams). The students were aged 6 – 10 years and were drawn from standard I to standard V of each school. Two students per class (one boy and one girl) were selected randomly, for the execution of the present study.

SURVEY SCHEDULE:

Detailed information required for the study was gleaned with the help of an interview schedule. Parents' education, occupation, income-level and budgetary provision for each category such as food, clothing, education, house, medicine, fuel and energy, transport, recreation and savings were collected, to assess the socioeconomic background of each family.

DIET SURVEY:

Dietary nutrient intake was assessed by the food weighment survey, for three consecutive days. The ingredients and the respective quantities taken were recorded and their nutrient intake for energy, protein, fat, calcium, iron, vitamin A and vitamin C, were calculated. The calculated daily nutrient intake in terms of Energy, protein, fat, calcium, iron, B carotene and Vitamin C were then compared against recommended dietary allowances for Indians (ICMR,2000).

ANTHROPOMETRIC SURVEY:

The heights and weights were carefully recorded and BMI was calculated. There are six classes of BMI; thinness grades 3, 2, 1, normal, overweight, obesity. Thinness 3-

<16kg/m^2 ; Thinness 2-<17kg/m^2 ; Thinness 1-<18.5kg/m^2 ; Healthy- <25 kg/m^2 ; overweight -< 30 kg/m^2 ; obesity- ≥ 30 kg/m^2 ; Thinness 1-3 were collapsed as underweight (UW< 18.5 kg/m^2) The obtained value was compared with the above values.

HAEMOGLOBIN ESTIMATION:

Blood samples were obtained from the respondents by finger-prick method and analysed, using the cyanomethaemoglobin method.

The nutritional and health status was assessed by four parameters such as, nutrient intake, anthropometric measurements, body mass index and haemoglobin level.

RESULTS AND DISCUSSION:-

The data collected from the respondents have been presented in Tables I to VII and figure I to III.

TABLE I
Fathers' educational status

Fathers education	Government school	Matriculation school
Primary school	33	25
Middle school	21	17
High school	25	10
Higher sec. school	14	23
Graduate	7	25
Total	100	100

Twenty five percent of the Matriculation school children's fathers were found to be graduates, while only seven percent of Government school children's fathers were seen to be graduates. Being graduates, they wanted their children to study more than what they have studied, they claimed.

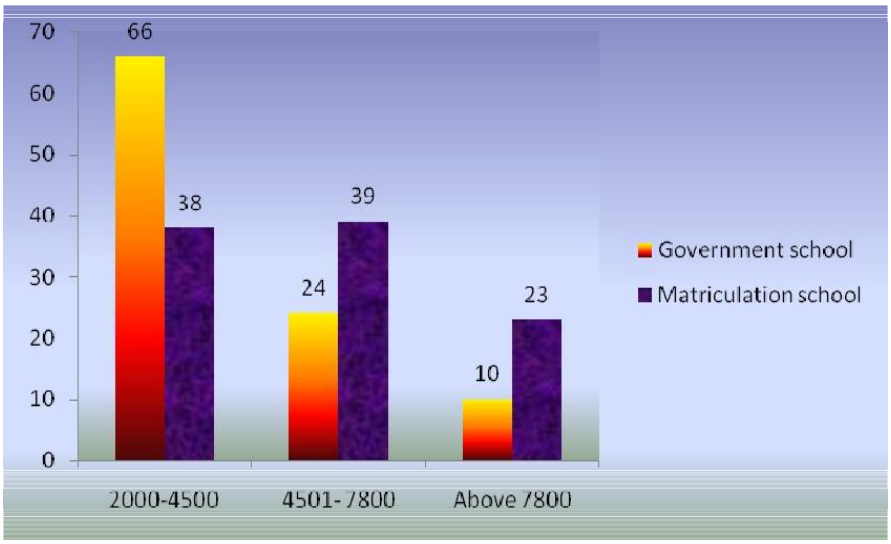
TABLE II
Fathers' occupational status

Fathers occupation	Government school	Matriculation school
Small entrepreneur	37	21
Farmer	20	29
Private worker	20	27
Government worker	23	23
Total	100	100

The main occupation of the people living in the selected area of study is agriculture. Most of the families migrate from their villages to the town area seeking more earnings in other pursuits, apart from agriculture, for their children's studies. A majority (29%) of selected respondents' fathers of Matriculation school respondents were found to be farmers. As they were land owners they seem to have the ability to

spend for education in Matriculation schools. A large number of the fathers (37%) of Government school children were found to be small entrepreneurs. They found it difficult to run their families owing to severe competition in their villages. Twenty- three percent of fathers from both streams (Government and Matriculation schools) were found to be government employees. The difference is their cadre of job. Government school children's fathers were found in lower-cadre jobs, like sweepers, scavengers etc.

Figure - I Fathers' income



Twenty-three percent of Matriculation school children's fathers were seen to earn salaries above Rs.7800 whereas, only ten percent of fathers of Government schools were seen to earn above Rs.7800. Most of the fathers of Government school children (66%) earned below Rs.4500, while only 38% of Matriculation school fathers were found to earn below Rs.4500. The above table clearly reflects that education and income are interrelated.

TABLE III
Mothers' educational status

Mothers education	Government school	Matriculation school
Primary	38	23
Middle school	9	25
High school	34	29
Higher sec. school	12	8
Graduate	5	15
Total	90	100

Thirty-eight percent of Government school children's mothers had studied only upto the primary level, whereas twenty-nine percent of Matriculation children's mothers were found to be high school passed individuals. As Matriculation school mothers seem to be higher in their educational levels, they seem to desire that their children should study more than what they had studied. Fifteen percent of Matriculation school children's mothers have studied upto degree level, in contrast, only five percent of Government school children's mothers were graduates.

TABLE IV
Mothers' occupational status

Mothers occupation	Government school	Matriculation school
House wife	56	36
Small entrepreneur	7	8
Farmer	19	23
Private worker	10	13
Government worker	8	20
Total	100	100

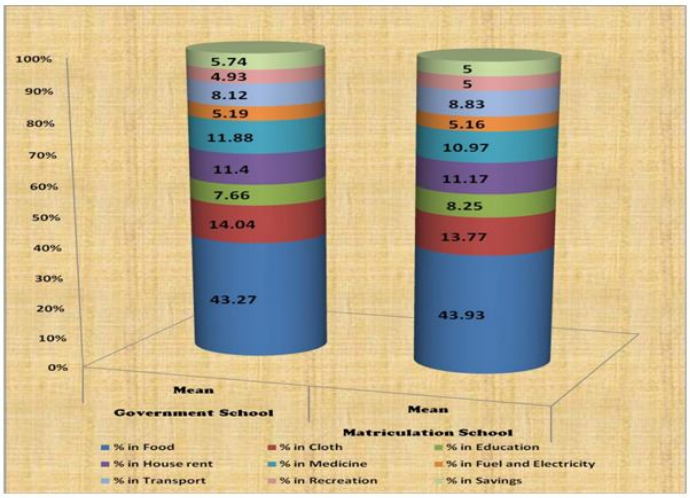
Most of the mothers of Government and Matriculation school children, 56% and 36%, respectively, were found to be housewives. Twenty percent of Matriculation school children's mothers were found to be Government employees, whereas, only 8% of Government school children's mothers were government employees.

TABLE V
Mothers' income

Mothers Income in Rs.	Government school	Matriculation school
No Income	56	38
2000- 4500	17	3
4501- 7800	22	32
Above 7800	5	29
Total	100	100

As most of the mothers of both the streams (Government and Matriculation) were housewives, they have no income of their own. When we observe the income-levels, twenty-nine percent of Matriculation school children's mothers were seen to earn above 7800 Rupees while twenty-two percent of Government school children's mothers earned between Rs.4501 – 7800. A meagre percent (5%) of Government school children's mothers were found to earn above Rs.7800 while three percent of Matriculation school children's mothers earned below Rs.4500.

Figure - II Expenditure Pattern.



In agricultural families of Government school children, the produce from their fields were sold and from these proceeds they bought the variety of rice they want, various vegetables, health drinks and every food item they need. In the case of joint families, during festival times Government school families seem to spend more on clothing, when compared with Matriculation school families.

As most of the mothers in Government school families were housewives, they seem to use electricity continuously as they were at home. In view of kerosene being available in insufficient quantities for preparation of food they were compelled to buy it at higher rates.

The mean expenditure on medical expenses, for the families of Government school children was around 11.88%. This increase was perhaps, due to their food habits and unhygienic practices. In the case of Matriculation schools the mean value for medical expenses was found to be 10.97% because of parents' carelessness in dietary practices and absence of regular health checkup for their children.

Parents of Matriculation school children were found to spend higher percentages of their income on their children's education. While Government school children's families spent more on transport as their residences were far from the purchasing area. This was the reason for their higher expenditure on transport. Parents of Matriculation school children's families were able to allot a certain amount for recreation due to their children's compulsion. Government schools children's families also seem to allot amounts for recreation. The parents of respondents from both the streams (Government schools & Matriculation schools) were seen to be concerned about savings. Though the Government school children's parents' incomes were found to be lower, their expenditure on various items were also lower; hence, they seem to have better opportunities to save for their future.

TABLE VI

Nutrient Intake.

Nutrient Intake	Government School		Matriculation School	
	Mean	SD	Mean	SD
Energy	1577.38	255.66	1793.07	302.29
Protein	32	7.96	39.86	9.64
Fat	20.22	3.14	22.89	4.23
Calcium	380.65	54.80	386.46	56.27
Iron	18.74	4.05	19.82	4.33
Vitamin A	1889.44	313.81	1963.89	328.15
Vitamin C	33.08	3.80	33.87	4.02

With respect to energy, protein and fat intake there was significant difference between children from Government schools and their counter parts from Matriculation schools. Compared to Government school children Matriculation school children seemed to have a better intake of nutrients viz. calories, protein and fat. However there, was no significant difference between Government school children and Matriculation school children, with respect to the intake of calcium, iron, vitamin A and vitamin C.

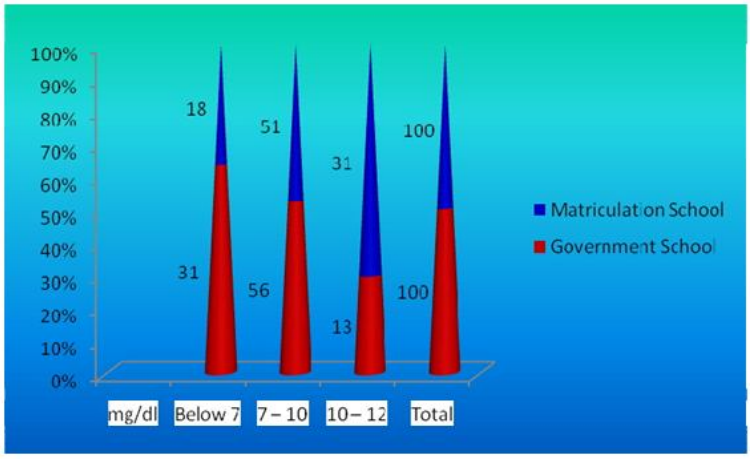
TABLE VII

Body mass index

BMI Group	Government School	Matriculation School
Thinness 3	58	42
Thinness 2	25	21
Thinness 1	15	28
Healthy	2	9
Total	100	100

Nine percent of Matriculation school children had normal BMI whereas only two of the Government school children was found to have normal BMIs. Fifteen percent, twenty-five percent and fifty-eight percent of Government school children were found to be belonged to Thinness 1,2 and 3 categories of Chronic Energy Deficiency (CED), respectively, while in Matriculation school children it were found to be the lowest.

Figure III Haemoglobin Level



A majority of Government school children (56%) and Matriculation school children (51%) had haemoglobin levels ranging from 7 to10mg/dl. Thirty-one percent of Government school children had haemoglobin levels below 7mg/dl, whereas, the same percent of Matriculation school children had haemoglobin levels ranging from 10- 12mg/dl. It appeared, therefore, that children studying in Matriculation schools had better intakes of vegetables, fresh fruits, dried fruits or whole grain cereals than their counterparts from **the Government stream.**

SUMMARY AND CONCLUSION:-

From the data discussed above, it may be concluded that socioeconomic conditions are closely related to the nutritional status of children. This is proved by comparing incomes of parents with the Body Mass Indices of their children. Though only twenty-three percent of fathers and eight percent of mothers of Government school children were Government employees, they preferred Government school education for their young children. The Noon meal programme appeared to play a significant role in meeting the nutritional needs of Government school children. The meals served to the children appeared to be sufficient, quantitatively. However, in terms of quality, some more changes are needed both, in the food preparation methods used and the types of foods included. Organizers of the Noon meal Programme must be more concerned about the quality of food and enable the children to get the nutrients needed, for their well-being. In the case of Matriculation school children, the availability of a variety of foods is more but their preparations seemed to be monotonous; this leads to the children's dislike of certain foods. Knowledge about their children's food tastes and preferences, besides their requirements and the way to meet them, should be taught to the parents. Dietary counseling services to advise and guide parents regarding the dietary needs of their children and planning suitable menu patterns for use in schools, may be organised as an integral part of the Health and Nutrition Counseling centre of each school.The study of Shaikh MK et al 2016 also suggested that health education for parents, students as well as school teachers is required to improve the situation.

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