A Study to Assess and Compare the Daily Nutrient Intake and Nutritional Status of the Children Utilizing and Not Utilizing Aanganwadi Services of District Ambala, Haryana.

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Abstract: *The children <6yrs are the best resource for human development and constitute 17% of total population of India, IMR in our country is 46.07/1000 live births and under five mortality is 62/1000 live births, Govt. of India is expanding ICDS programme. The present study compared the Daily nutrient intake against Recommendatory Dietary Allowance and Nutritional status, and to determine relationship between daily nutrients intake and Nutritional status of the children utilizing and not utilizing Anganwadi services. Utilizing General system model and non experimental approach, data was collected using 24 hour dietary recall for Daily nutrient intake (carbohydrate, proteins, fats and calories) and anthropometric assessment for nutritional status (Height, Weight and BMI on WHO charts) of 60 randomly selected children utilizing and not utilizing Anganwadi services of Ambala, Haryana. Finding revealed that under nutrient intake, daily carbohydrate intake of children utilizing (132.95±62.28) and not utilizing (86.65±39.78), calories intake of children utilizing (820.89±257.64) and not utilizing (632.62±283.92) Anganwadi services was significantly different at with t value 3.42 and 2.69 respectively, at 0.05 level of significance. Under nutritional status of children utilizing and not utilizing Anganwadi services was not significantly different .There was significant relationship of carbohydrate intake with height in both groups and significant relationship of carbohydrate with weight in children availing Anganwadi services . There was significant relationship of protein intake with height & weight and Fat intake with height with(r =0.618,P value<0.05) and(r= 0.605 , P < 0.05) respectively in children not availing Anganwadi services. Study concluded that the children utilizing and not utilizing Anganwadi services have the similar nutritional status.*
Key Words: *Daily Nutritient intake, Nutritional status, Children, Aanganwadi services, Primary Caregiver, Selected variables.*

I. Introduction And Background Of The Study:

Growth and development of any country is reflected by the growth and development of its children. India is one of the fastest growing countries in terms of population and economics, sitting at a population of 1,139.96 million (2009) and growing at 10–14% annually (from 2001–2007).

The 2011 Global Hunger Index (GHI) Report ranked India 15th, amongst leading countries with hunger situation. It also placed India amongst the three countries where the GHI between 1996 and 2011 went up from 22.9 to 23.7, while 78 out of the 81 developing countries studied, including Pakistan, Nepal, Bangladesh, Vietnam, Kenya, Nigeria.

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In India, common illness in children under 3 years of age includes fever (27%), acute respiratory infection (17%), and diarrhea (13%), Malnutrition (43%). 2.1 million Indian children dies before reaching the age of 5 every year due to preventable illnesses such as diarrhea, typhoid, malaria, measles, malnutrition and pneumonia. Child malnutrition is responsible for 22 percent of the country's burden of disease

Despite the recent economic pace, the democratic republic of India still features the world's worst mortality rates which is present among most vulnerable groups of population those are young children and mothers. The various problems concerning children are still of fairly large dimensions. The incidence of mortality, morbidity and malnutrition among children continue to be alarming high. It has also been established that supported by malnutrition which account for the large incidence of child wastage and childhood diseases.

Malnutrition refers to the situation where there is an unbalanced diet in which some nutrients are in excess, lacking or wrong proportion. It can be categorized as under-nutrition and over-nutrition. Despite India's 50%

increase in GDP since 1991, more than one third of the world's malnourished children live in India. Among these, half of them are underweight and one third of wealthiest children are over-nourished

Deficiencies in nutrition inflict long-term damage to both individuals and society. Compared with their better-fed peers, nutrition-deficient individuals are more likely to have infectious diseases such as pneumonia and tuberculosis, which lead to a higher mortality rate. In addition, nutrition-deficient individuals are less productive at work. Low productivity not only gives them low pay that traps them in a vicious circle of under-nutrition, but also brings inefficiency to the society, especially in India where labor is a major input factor for economic production.[i] On the other hand, over-nutrition also has severe consequences. In India national obesity rates in 2010 were 14% for women and 18% for men with some urban areas having rates as high as 40%.[ii] Obesity causes several non-communicable diseases such as cardiovascular diseases, diabetes, cancers and chronic respiratory diseases.[iii]

The causes of malnutrition could be viewed as immediate, underlying and basic. The immediate determinants of a child's nutritional status includes inadequate dietary intake and illness and these are in turn influenced by three household- level underlying determinants namely food, health and care. Food refers to food security at the household level. It is the sustainable access to safe food of sufficient quality and quantity, paying attention to energy, protein and micronutrients. This in turn depends on having financial, physical and social access as distinct from mere availability. Health includes access to curative and preventive health services to all community members as well as hygienic and sanitary environment and access to water. Care refers to a process taking place between a care giver and the receiver of care. Care includes care for women, Breast feeding and complementary feeding, home health practices, hygiene practices, psycho- social care, and food preparation. The factors that determine adequate household food security, care and health are related to resources, their control and a host of political, cultural, and social factors that affect their utilization. Resources include human, economic, and organizational resource. Embedded in human resources are skills, motivation and Knowledge, which is also influenced by education. Basic determinants are political and economical structure socio cultural environment.

The study conducted on 90 rural pre-school children (1–3 years) in summer and winter from Bhiwani, Hisar and Kurukshetra, Haryana State, India revealed that the Mean daily food intake of cereals, pulses, green leaf vegetables, other vegetables, roots and tubers, milk products, fats and oils, sugar and jaggery and fruits was found lower than their respective recommended dietary intake (RDI) in summer season whereas in winter season mean daily food intake of milk and milk products provided 6,7, and 32 per cent more than RDI in the diets of pre-schoolers of Hisar, Bhiwani and Kurukshetra zones, respectively, Similar trend was also found in nutrient intakes. Mean height and weight of few children were found lower in Hisar and Bhiwani and higher in Kurukshetra compared to their reference values. On the basis of weight for age and height for age criteria as well as clinical examinations, majority of children were found normal in Kurukshetra.[iv]

The package of services provided by the ICDS scheme includes supplementary nutrition, immunization, health check-up, referral services, nutrition, health education, and pre-school education. The distribution of iron and folic acid tablets and mega dose of vitamin A is also undertaken, to prevent iron deficiency anaemia and xerophthalmia respectively.

ICDS scheme provides an integrated approach for converging all the basic services for improved child care, early stimulation and learning, health and nutrition, water and environmental sanitation aimed at the young children, expectant and lactating mothers, other women and adolescent girls in a community. Integrated Child Development Service Scheme objectives are, to improve nutritional and health status of children of 0-6 years, to reduce the incidence of mortality, morbidity, malnutrition and school dropout, to achieve effective co-ordination amongst various departments to promote child development, to lay foundation of proper psychological, physical and social development of the child, to enhance mother's capability to look after normal health and nutritional needs of the child.

Timely assessment of nutritional deficiencies and their management is crucial in children. Nutritional assessment in the country serves as appropriate data gathering processes to enable accurate planning and implementation of interventions to reduce morbidity and mortality associated with under nutrition.

II. Objectives Of The Study

To assess and compare the Daily Nutrient intake against Recommended Dietary Allowance of the children utilizing and not utilizing Aanganwadies services.

To assess and compare the Nutritional status of the children utilizing and Not utilizing Aanganwadi services.

To determine relationship between Daily Nutrients intake and Nutritional status of the children utilizing and not utilizing Aanganwadi services.

To determine association of Daily Nutrients intake and Nutritional status of the children utilizing and not utilizing Aanganwadi services with selected variables.

III. Material And Method

In view of the nature of the problem and to accomplish objectives of the present study Non-experimental approach was considered to be the most appropriate approach and descriptive comparative design was chosen. The present study comprised of sixty children (30 utilizing and 30 not utilizing Anganwadi services) in the age of 1-3 yrs. This group was taken for the study as most of the children join the school after three years. The purposive sampling was done for the children utilizing and not utilizing Anganwadi services.The tool consists of sample characteristics, consisted of 24 dietary recall, one Anganwadi meal verification, WHO growth charts. The interview, observation, antherpometic measurement technique used.

IV. Findings

The majority of the children (66.6%) utilizing Anganwadi services and (93.3%) not utilizing Anganwadi services taking <135gm carbohydrate. The majority of the children utilizing Anganwadi services (96.6%)having protein intake >14gms and (76.6%) not utilizing Anganwadi services having protein intake >14 gms. The majority of the children utilizing Anganwadi services (83.3%)having fat intake <53 gms and (93.3%) not utilizing Anganwadi services having protein intake <53gms.The majority of the children utilizing Anganwadi services (80%) having calories intake <1200Kcal and (96.6%) not utilizing Anganwadi services having protein intake<1200Kcal.

According to weight 13 (43.3%), 12(40%),5(16.6%) of children utilizing Anganwadi services were Normal under weight, severely underweight respectively and 9 (30%),16(53.3%),5(16.6%) not utilizing Anganwadi services were Normal, under weight, severely underweight respectively.
8(26.6%),12(40%),10(33.3%) children utilizing Anganwadi services had height normal, stunted, severely stunted respectively and 8 (26.6%),5(16.6%),17(56.6%) not utilizing Anganwadi services were normal stunted and severely stunted respectively.
3(10%),3(10%),5(16.6%),11(36.6%), 3(10%), 5(16.6%) children utilizing Anganwadi services have BMI as obese, overweight, possible risk of overweight, normal, wasted, severely wasted respectively and 3 (10%), 13 (43.3%), 10 (33.3%), 10(10%) and 1(3.3%) not utilizing Anganwadi services were overweight, possible risk of overweight, Normal, wasted, severely wasted .
There was significant relationship of carbohydrate intake with height of children in both groups and significant relationship of carbohydrate with weight in children utilizing Anganwadi services, there was significant relationship of protein intake with height & weight and Fat intake with height of children not utilizing Anganwadi services.

The significant association of the Nutrient carbohydrate with age and education of father with chi square value 11.3&7.14, protein with Duration of exclusive breast feeding with chi square value 9.31, fat intake is significantly associated with time of weaning and education of father with chi square value 3.81&13.3, calories intake is significantly associated with family income with chi square value 7.04 in children utilizing Anganwadi services. Daily protein intake is significantly associated with type family with chi square value 4.45, fat intake is significantly associated with History of illness with chi square value 30.0, daily calories intake is significantly associated with History of illness with chi square value 30.0 in children not utilizing Anganwadi services. Rest of all variables are not associated with the nutrients (carbohydrate, protein, fat, and calories.)
The significant association of the weight with birth order and family income with chi square value 13.6 and16.4 respectively .Height and BMI were found non-significant with the variables age, gender, Type of Family, No. Of sibling, Birth order, Birth interval from elder, birth interval from younger, history of illness, Duration of exclusive breast feeding, time of weaning, supplementary nutrition, immunization, Education of mother, Education of Father, Occupation of father, occupation of mother, family income. It means weight and BMI of the children have no association with the sample characteristics.

V. Conclusion

The daily carbohydrate and calories intake in children utilizing Anganwadi services was more than those not utilizing Anganwadi services. 66.6% of children utilizing and 93.3% children not utilizing Anganwadi services were consuming less than RDA of carbohydrate, protein 3.3% of children utilizing and 26.6% children not utilizing Anganwadi services were consuming less than RDA of protein ,the 86.6% of children utilizing and 96.6% not utilizing Anganwadi services were consuming less than RDA of fat, the 93.3% of children utilizing and 96.6% not utilizing services were consuming less than RDA of calories.

The Nutritional status of children utilizing and not utilizing Anganwadi services was not significantly different. The majority of the children, utilizing Anganwadi services 12 (40.0%)having stunted where as children not- utilizing Anganwadi services 17 (56.6%)having the severely stunted Height. The majority of the children, utilizing Anganwadi services 13 (43.3%) having normal weight where as children not- utilizing Anganwadi services 16 (53.3%)having the underweight. The majority of the children utilizing Anganwadi

services 11(36.6%)were having Normal BMI, Where as children not-utilizing Anganwadi services 13 (43.3%)were having possible risk of overweight.

 There was significant relationship of carbohydrate intake with height of children in both groups and significant relationship of carbohydrate with weight in children utilizing Anganwadi services, there was significant relationship of protein intake with height & weight and Fat intake with height of children not utilizing Anganwadi services. Study concluded that the children utilizing and not utilizing Anganwadi services have the similar Daily nutrients intake, and nutritional status.

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