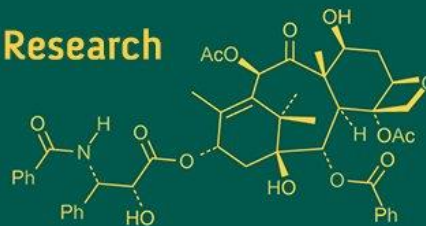
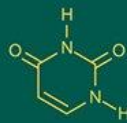
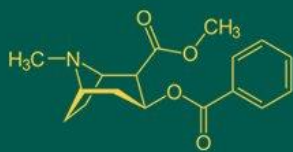


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Usha
 M.Sc. Student, Department of
 Food Science and Nutrition,
 collage of Community Science
 Chandra Shekhar Azad
 University of Agriculture and
 Technology Kanpur,
 Uttar Pradesh, India

Dr. Vinita Singh
 Associate Professor,
 Department of Food Science
 and Nutrition, collage of
 Community Science
 Chandra Shekhar Azad
 University of Agriculture and
 Technology Kanpur,
 Uttar Pradesh, India

Corresponding Author:
Usha
 M.Sc. Student, Department of
 Food Science and Nutrition,
 collage of Community Science
 Chandra Shekhar Azad
 University of Agriculture and
 Technology Kanpur,
 Uttar Pradesh, India

Macro-nutrients intake of anganwadi children in Ayodhya district

Usha and Dr. Vinita Singh

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Abstract

The current study examines the quality of life and nutrient intake of Anganwadi children, with a focus on nutritional status of anganwadi children. 100 anganwadi children, aged between 3 to 4 and 4 and 6 years, who lived in the Milkipur Block in the Ayodhya district made up the sample. Purposive data collection was conducted in the Milkipur Block of Ayodhya district, along with visits to some anganwadi children's homes. A survey that was self-organized was created to get the necessary data from children that reside in anganwadi centre. The 24-hour dietary recall method was used to examine the nutrients intake of results. The study on anganwadi children's nutritional intake revealed significant deficiencies and some increases as compared to the Recommended Dietary Allowances (RDA). Energy intake for both age groups (up to 3 years and 4-6 years) is deficient. Carbohydrate and protein intake, however, exceeded RDA in both groups. Fat intake show significant deficits in both age groups. RDA indicated that the nutrients intake of anganwadi children was inadequate as compared to RDA. Most of anganwadi children's 1015 K Cal energy, 14.9 gm of protein, 22.3 gm of fat was found to be lower than suggested dietary limits. All nutrients, with the exception of protein and fat were consumed at quantities above the recommended daily Allowances but energy intake was determined to be insufficient.

Keywords: Anganwadi, energy (K Cal), carbohydrate, protein (gm), fat (gm), RDA (Recommended dietary allowance) and nutrients intake

Introduction

Anganwadi is a type of rural child care centre in India. It was started by the Indian government in 1975 as part of the Integrated Child Development Scheme program to combat child hunger and malnutrition. Anganwadi in Hindi means "courtyard shelter" in English. Anganwadi mean (a central area in and around the house where most of the social activities of the household takes place) Anganwadi is a government sponsored child-care and mother-care center in India. It caters to children in the 0-6 age group. These centers offer health education, immunizations, supplementary nutrition, non-formal pre-school education, nutrition, and health check-ups and referral services, the last three of which are delivered in conjunction with public health system. According to ICDS (2012) ^[1]

The centers can serve as depots for contraceptives, over-the-counter medications, and oral rehydration salts. Out of the 13.7 lakh approved Anganwadi and mini-Anganwadi centers (AWCs/mini-AWCs), as of January 31, 2013, as many as 13.3 lakh (a lakh equals 100,000) were in operation. These centers include health education, immunizations, supplementary nutrition, non-formal pre-school education, nutrition, health check-ups, and referral services—the last three of which are offered in conjunction with public health systems. The centers can serve as depots for contraceptives, over-the-counter medications, and oral rehydration salts. Out of the 13.7 lakh approved Anganwadi and mini-Anganwadi centers (AWCs/mini-AWCs), as of January 31, 2013, as many as 13.3 lakh (a lakh equals 100,000) were in operation. These centers include health education, immunizations, supplementary nutrition, non-formal pre-school education, nutrition, health check-ups, and referral services—the last three of which are offered in conjunction with public health systems. According to population policy (2000) ^[2]

The body needs nutrients, which are chemical components, to maintain basic activities. Eating a balanced diet is the best way to receive nutrients.

The four main nutritional classes— Energy, carbohydrates, proteins, fat are critical to human health. The macronutrients that provide energy are lipids, proteins, and carbohydrates. Large amounts of water are needed, yet they don't provide energy. The following biochemical facets of the necessary nutrients will be examined in this article: principles, cellular, molecular, function, examination, and a direct impact on human health. Alyssa L.morris, shamin S. Mohiuddin (2023) [5].

While protein and other nutrients are included in food intake, energy intake is one of the primary factors and plays a critical role in enhancing food usage. An individual's energy need is the quantity of dietary energy (obtained from food) required to support growth, health, and a suitable degree of physical activity (Torun, 1996) [6].

The majority of children who received nutrition through the ICDS 9 to10 program have good nutritional status. The Integrated Child Development Services Programme aims to provide services to pre-school children in an integrated manner to ensure proper growth and development of children in rural, tribal, and slum areas. According to (NFSH) National family health survey

A person's or a population group's current state of nourishment, or the ingestion and utilization of nutrients, is referred to as their nutritional status. A complicated relationship between internal/constitutional variables and environmental factors determines the nutritional status: outside Factors such as age, sex, diet, behavior, physical exercise, and illnesses that are internal or constitutional. Environmental variables that are external, such as food safety and social, cultural, and economic conditions M Potempa –Jezirowska (2022) [7].

Methodology: The current study was carried out over a period of June 2023 to June 2024 with the purpose of obtaining information about "nutrients intake with specific citation to undernourishment in anganwadi children attending of Anganwadi centre of ayodhya District, milkipur block." A purposive random sampling strategy was used to gather 100 children age group of 3 to 4 and 4 to 6 years old who attended Anganwadi centers in the rural area of ayodhya district ,milkipur block. The institutional ethical committee gave its approval to the study, and parents or other child caretakers as well as respected authorities provided informed consent. The demographic information were gathered, and children's guardians also gathered specialized data, such as eating habits of anganwadi children, nutrient intake, children's interest in visiting Anganwadi, and whether or not they enjoy the flavor of the food or food products offered by Anganwadi. 24-hour recall method Using measuring dishes, cups, and spoons, the subject is asked to recollect everything they ate and drank the day before, describing the type and quantity of each item. The data is collected in order to determine the mean dietary intake of nutrients per adult body value, or "consumption unit," as well as the mean dietary intake (in grams) of foods like cereals, legumes, fruits, vegetables, meat, fish, and eggs. For this activity, the right food composition tables must be used. food frequency approach and dietary recall technique over a three-day period utilizing standardized cup sets to assess their consumption of food and 15 nutrients. In order to evaluate the dietary intake, diet recall and meal frequency methods were also used. The Indian Council of Medical Research's (ICMR) Public Nutritive Value of Indian Foods is an excellent resource that was used for the analysis.

Results and Discussion

The result of the current investigation, as well as relevant discussion, have been summarized under the following heading:

Table 1: Distribution of children energy consumption as compared to the RDA

Age group	Energy Kcal				
	Percent	Mean	S.D.	RDA	% Deficit
Up to 3 Years	22.0	1002.8	282.4	1010	- 0.7
4 to 6 Years	78.0	1018.9	251.4	1360	- 25.1
Total	100.0	1015.4	257.1		
Correlation Coefficient (r)	0.1981*				p<0,05

Table 1: The data presented in table reveals the average energy intake of anganwadi children's up to 3 years age group of children were taking average 1002.8 Kcal with standard deviation 282.4 which is found to be deficient from RDA i.e. 0.7 Percent whereas age group of 4-6 years children's were taking energy 1018.9 kcal intake from overall diet which is deficit from RDA that i.e. 25 percent. The correlation coefficient (0.1981*) was found to be significant at 5% of level of significance have energy intake by children and age group of anganwadi children was significantly correlated each other. According to the previous information the children's overall energy consumption was low, and when their energy intake as compared to the recommended daily allowance, it was found that they were also consuming less calcium and fat.

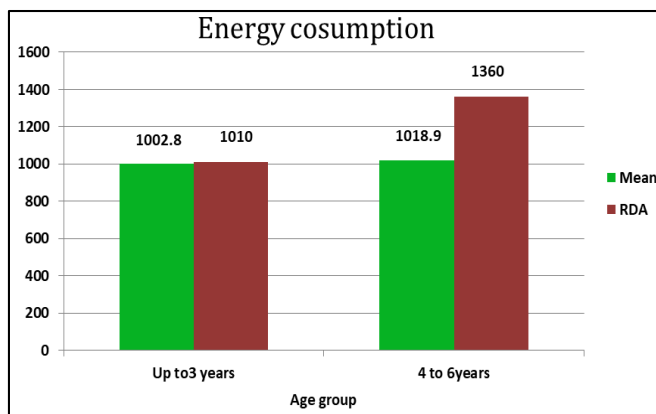


Fig 1: Distribution of children energy consumption as compared to the RDA

Table 2: Distribution of children carbohydrates consumption as compared to the RDA

Age group	Carbohydrate (gm)				
	Per cent	Mean	S.D.	RDA	% Deficit
Up to 3 Years	22.0	192.0	32.4	130	+ 47.7
4 to 6 Years	78.0	199.4	33.1	130	+ 53.4
Total	100.0	197.7	32.9		
Correlation Coefficient (r)	0.0145*				p>0.05

Table 2: the data in the table reveals the average amount of carbohydrates consumed of anganwadi children up to the age of 3years is 192.0 kcal with standard deviations of 32.4, which is found to increased as compared to RDA i.e. 42.7 percent. However, the average amount of carbohydrates consumed by children aged 4-6 years is 199.4 kcal from their overall diet, which is found to increased as compared to RDA i.e. 53.4 percent. The correlation coefficient

0.0145* was found to be significant at the 5% level of significance, indicating a significant correlation between the amount of carbohydrates consumed by children and the age group of anganwadi children. According to the previous information the children's overall carbohydrate consumption was high, and when their carbohydrate intake as compared to the recommended daily allowance, it was found that they were having consumed high carbohydrate such as bread, chapati, rice chips, biscuit, sweet potato, daliya, wheat pasta and also sometimes consumed ragi and bajra.

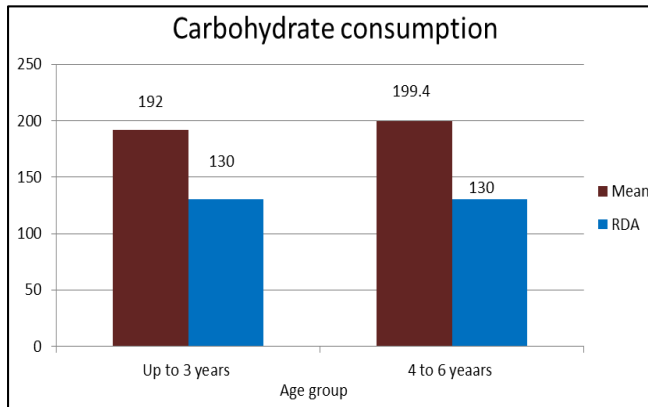


Fig 2: Distribution of children carbohydrates consumption as compared to the RDA

Table 3: Distribution of children protein consumption as compared to the RDA

Age group	Protein (gm)				
	Per cent	Mean	S.D.	RDA	% Deficit
Up to 3 Years	22.0	13.2	7.5	11.3	+ 16.8
4 to 6 Years	78.0	16.6	9.3	15.9	+ 4.4
Total	100.0	14.9	8.9		
Correlation Coefficient (r)	0.2252*				$p < 0.05$

Table 3: The data in the table reveals the average intake of protein of anganwadi children up to the age of 3 years aged had the highest level of 16.8 percent increase with mean score 13.2 and standard deviations 7.5 whereas 4.4 percent increase protein was found in 4 to 6 years of age group with mean score 16.6 and standard deviations 9.3 in the study area. The correlation coefficient 0.2252* was found to be significant at the 5% level of significance, indicating a significant correlation between the amount of protein consumed by children and the age group of anganwadi children

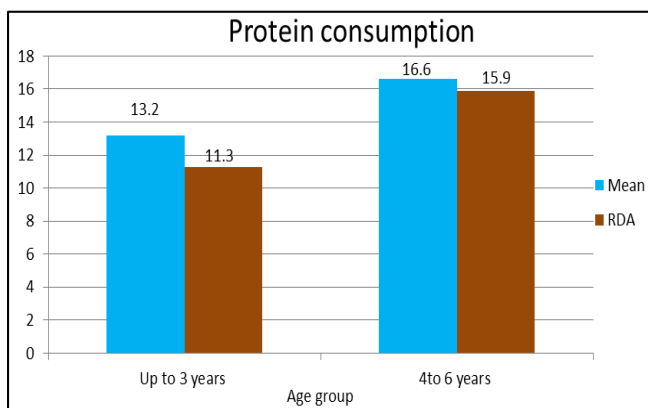


Fig 3: Distribution of children protein consumption as compared to the RDA

Table 4: Distribution of children fat consumption as compared to the RDA

Age group	Fat (gm)				
	Per cent	Mean	S.D.	RDA	% Deficit
Up 3 Years	22.0	21.0	6.1	25	16.0
4to 6 Years	78.0	22.4	5.0	25	10.4
Total	100.0	22.3	5.3		
Correlation Coefficient (r)	0.1986*				$p < 0.05$

Table 4: Depicts the average intake of fat of anganwadi children as compared to the recommended dietary allowance (RDA) The age group up to 3 years aged had the highest level of 16.0 percent deficient of fat with mean score 21.0 and standard deviations 6.1 whereas 10.4 percent deficient fat was found in 4 to 6 years of age group with mean score 22.4 and standard deviations 5.0 in the study area. There a substantial association between the age group of anganwadi children and the amount of fat they consume, as indicated by the correlation coefficient 0.1986*, which was found to be significant at the 5% level of significance. While the majority of them come from lower-class backgrounds, this could be one of the causes of their improper consumption of foods high in fat, such as ice cream, cream-based products, butter, lard, and cheese—especially hard cheeses like cheddar.

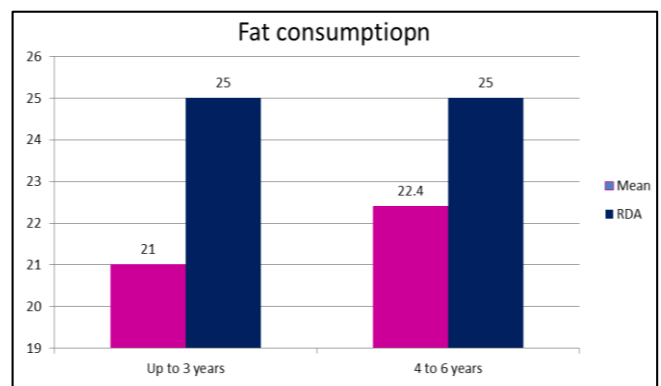


Fig 4: Distribution of children fat consumption as compared to the RDA

Conclusion

The study on anganwadi children's nutrients intake reveals significant deficiencies and some increases as compared to the Recommended Dietary Allowances (RDA). Energy intake for both age groups (up to 3 years and 4-6 years) was found deficient. Carbohydrate and protein intake, however, exceeded RDA. Fat intake show significant deficits in both age groups. Children aged 4-6 years showed a higher prevalence of deficiencies as compared to recommended dietary allowances (RDA). According to the overall information the anganwadi children's was found nutrients consumption was low, and when their energy intake as compared to the recommended daily allowance, it was found that they were also consuming less fat. The majority of them were belong to a lower socioeconomic group, which could be one of the causes of inadequate food consumption and malnourishment. Because mothers lacked education, their children's inadequate nutrition intake can also be linked to their lack of awareness of nutrients intake. While the majority of them come from lower-class backgrounds, this could be one of the causes of their improper consumption of foods high in fat, such as ice

cream, cream-based products, butter, lard, and cheese—especially hard cheeses like cheddar.

References

1. Integrated Child Development Services (ICDS). ICDS c2012. Available from: <https://www.upaganwadibarti.in>. Accessed [Date Accessed].
2. National Population Policy. National Commission on Population website; c2000. Archived 7 February 2012 at the Wayback Machine. Accessed 13 February 2008.
3. ICDS Entitlements. PIB. Available from: <https://pib.gov.in>. Accessed 6 June 2022.
4. Anganwadi Centres. [No further details provided].
5. Morris AL, Mohiuddin SS. The body needs nutrients, which are chemical components, to maintain basic activities. The macronutrients that provide energy are lipids, proteins, and carbohydrates; c2023.
6. Torun A. Food science and technology. An individual's energy need is the quantity of dietary energy (obtained from food) required to support growth, health, and a suitable degree of physical activity; c1996.
7. Potempa-Jeziorowska M, Jonczyk P, Kucharzewski M. A complicated relationship between internal/constitutional variables and environmental factors determines the nutritional status: outside factors such as age, sex, diet, behavior, physical exercise, and illnesses that are internal or constitutional. Natl Fam Health Surv. c2022.