

Nutrition related Knowledge, Attitude and Practices of ABHA workers of TPDDL, Delhi

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Introduction

Nutrition is an integral part of life and aids in development and growth of all living beings. With better nutrition, a person remains healthy.

It is basically the intake of the required amounts of solids and liquids as per the dietary recommendations so that essential nutrients and energy is absorbed and obtained respectively to the body.

From the early stages of life proper diet is essential to remain active along with appropriate growth and development





In a developing country like India, the dual burden of both these forms of malnutrition i.e. Undernutrition and Overnutrition is faced



In India 35.8% children under 5 years are underweight (low weight for age) as per NFHS 4



About 22.9% of women (15-49 years) have BMI below normal ($<18.5 \text{ kg/m}^2$) as per the NFHS-4 2015-16 National Fact Sheet.



As per NFHS 4, 20.6% women (15-49 years) and 18.9% of men were obese ($>25 \text{ BMI}$). [4]



Specific micronutrient deficiencies are also included in undernutrition. They occur because the body does not receive the essential vitamins and minerals in their small quantities for proper growth and development.

Vitamin A Deficiency



The inadequate intake of Vitamin A causes night blindness or visual impairment (CNNS And UNICEF 2018).



According to WHO it affects one third of children globally, with an increased risk of childhood morbidity and mortality due to common infections.



As per the report of CNNS the Vitamin A deficiency prevalence in children 1 to 4 years were 18%, 5 to 9 years were 22% and adolescents aged 10-19 years were 16%.

Anemia and Iron Deficiency



Anemia is linked to deficiency of micronutrient iron (majorly), folic acid and Vitamin B12, and is also known as Iron deficiency Anemia [6] and is a major public health problem in India [10].



Due to lack of iron primarily, Vitamin B12 and folate, the quantity of haemoglobin and red blood cells reduces, thus affecting the oxygen carrying capacity and hence the parts of the body do not receive ample oxygen



NFHS 4 surveys showed that 58.6 % children aged under 5 years and 53.1% women in reproductive age group are anemic

Iodine Deficiency

Iodine is one of the necessary micronutrients required for the proper functioning of the body and its lack could cause goitre (enlargement of thyroid gland) and affecting the synthesis of thyroid hormone, which leads to functional abnormalities termed as Iodine Deficiency Disorder (IDD).

As per the CNNS report, the urinary iodine levels in children and adolescents were in the optimum range i.e., $mUIC \geq 100 \mu g/l$ & $\leq 300 \mu g/l$. [8].



It was reported that household coverage of iodized salt in the adequate quantity at the national level was 76.3%, only 16.1% of the households consumed salt with some proportion of iodine and 7.6% of the households consumed salt with no iodine as per the study carried out by Nutrition International [14].



Vitamin D and Calcium Deficiency



Consumption of Calcium and Vitamin D is necessary for good bone health. Despite India, being a subtropical country with plentiful sunlight, 85% of the population are Vitamin D deficient.

The lack of Vitamin D affects the calcium regulation in the body and that is why nutritional rickets affecting both children and adults are due to calcium deficiency and secondary vitamin deficiency

At Tata Power DDL, the CSR Department (Social Impact Group) works towards empowering and community development through the initiatives under 4 pillars, namely –



Women and Youth Empowerment



Supporting healthy lives



Economic upliftment of marginalized communities



Combating Climate change

Under the Unnati pillar, women from the community are made literate through the Women Literacy Centers (WLC).

Many women, after experiencing the joys of literacy, wished to contribute further, which led to the development of the **ABHA programme**. They are the women representatives who work as the brand ambassadors for the Unnati programme.



ABHA who are termed as the change agents, are the women representatives who are tasked with helping in the implementation of the Social Innovation Programs in the JJ Clusters.



They are the link between the community and reach out to the residents of the JJ Clusters to bring about the visibility to the community initiatives being run by the Social Impact Group – the CSR Department of Tata Power DDL.



Since they represent the community itself and conduct awareness campaigns by going door-to-door, it's imperative that they have the basic nutritional awareness and knowledge of healthy balanced diets.



Hence, through this study, possible the understanding pertaining to their knowledge attitude and practices regarding nutrition can be determined.

Literature Review

S.No:	Author	Title	Overview
1.	Upadhyay S, Kumar AR, Raghuvanshi RS, Singh BB	Nutritional status and knowledge of hill women on anemia: effect of various socio-demographic factors	This was a cross-sectional study which was undertaken in three villages of the Nainital district, Uttarakhand, India in 2017 to determine the nutritional knowledge on anaemia of the hill women. A random sample of 223 women were selected and they were of the age group 18-45 years. Their knowledge was assessed using scoring and it was found that the mean percent score was 23.28. And it was seen that with a rise in age the scores decreased. Nutritional anaemia knowledge in these hill women were significantly associated with their educational status. The conclusion was that the nutritional awareness was not satisfactory and more intense awareness campaigns were recommended.
2.	Anand D, Puri S.	Nutritional knowledge, attitude, and practices among HIV-positive individuals in India.	This is a study carried out in 2013 which investigated the Knowledge attitude and practice related to nutrition among 400 HIV-infected people living in Delhi, India. The nutritional knowledge among them was accepted as moderate and they also observed a positive attitude to the food and nutritional aspects. However, the practice of healthy nutrition was low with a score of 8.1 out of 15. This represented that there is lack in conversion of knowledge and attitude to practice, suggesting strong and targeted behavioural interventions.
3.	Dr.Bharati.R, Dr.R.Dheeba Jayanthi, Dr.R.Padmapriya	KAP study on nutrional awareness among pregnant women in a tertiary care centre	This study was conducted in 2017 to determine the knowledge, attitude and practices of pregnant mothers towards nutrition during their gestation in a tertiary care centre in Salem, Tamil Nadu, India. 1000 pregnant women during their antenatal care at the clinic were the sample number for the study. It was found that only 8% of the women had good knowledge, whereas 35% of the women had poor knowledge about nutrition in pregnancy. Majority of these women were unaware of the common sources of nutrition. The study recommended improved nutritional counselling in the antenatal period.
4.	Gupta MC, Mehrotra M, Arora S, Saran M	Relation of childhood malnutrition to parental education and mothers' nutrition related KAP	In this study, conducted in 1991 assessment was performed in finding a relation between childhood malnutrition to the educational status of the parents and the nutrition related KAP of the mothers. 26 severely malnourished and 26 normal children were used as the sample for the study. There was no relation between father's educational status and children's malnourishment, whereas there was an association between the mother's educational status and the children's nutritional status. The study also revealed that the mother's of comparatively healthier children had much higher KAP score on nutrition in contrast to the mothers of the malnourished children.

5.	Gonmei Z, Toteja GS	Micronutrient status of Indian population	This study is a review of the micronutrient scenario in the current times by including several national surveys and studies carried out on the same. The micronutrients studied hear are – • Iron, Vitamin B12, folate and ferritin deficiency (Anaemia) • Vitamin A deficiency • Iodine deficiency All these deficiencies were explained in detail, along with the initiatives implemented in India to improve the status.
6.	Saeidlou SN, Babaei F, Ayremlou P.. Maedica.	Nutritional knowledge, attitude and practice of north west households in Iran: is knowledge likely to become practice?	This is a cross-sectional population study conducted in the West Azerbaijan Province in 2016, to assess the Knowledge, Attitude and Practices of the urban and rural households regarding the principles of nutrition. 455 urban and rural households were studied. It was observed that more than half of both the households knew about the roles of the food groups. The role of fruits and vegetables as source of vitamins intake had the highest frequency of 68% and 62.5% respectively. And it was recommended that more nutrition knowledge to be integrated into the household training initiatives so as to improve practice and attitude towards diet and nutrition.
7.	Weerasekara PC, Withanachchi CR, Ginigaddara GA, Ploeger A.	Food and Nutrition-Related Knowledge, Attitudes, and Practices among Reproductive-ageWomen in Marginalized Areas in Sri Lanka	This is a cross-sectional study of food and nutrition related KAP survey administered in 400 women of reproductive age group (18-49 years) in the marginalized areas of Sri Lanka. It was conducted from 2017 to 2019. It was observed that there is strong positive correlation between nutritional knowledge, attitude score and the BMI level. And the attitude and practices of nutrition had significant differences across area, age, family size, monthly income and educational levels. They concluded that though majority displayed positive attitude towards gaining nutritional insights, their current nutritional knowledge is poor, thus emphasizing the strong need of nutritional awareness measures in the marginalized communities.
8.	Liu H, Xu X, Liu D, Rao Y, Reis C, Sharma M, Yuan J, Chen Y, Zhao Y.	Nutrition-Related Knowledge, Attitudes, and Practices (KAP) among Kindergarten Teachers in Chongqing, China	As kindergarten teachers play a major role in shaping young minds, this study’s objective was to assess the knowledge, attitudes and practices related to nutrition in which a structured KAP model questionnaire was used. 222 kindergarten teachers were the sample population from 19 districts and 20 counties in Chongqing, China and was conducted from 2016 to 2017. It was reported that 54.2% of the sample were familiar with basic knowledge on nutrition, and only 9.9% were said to be satisfied with their current knowledge on nutrition. 97.7% displayed a positive attitude towards receiving more knowledge. Since there were low levels of nutrition related knowledge which implied necessary training of the kindergarten teachers to improve the nutrition related knowledge.



Research Question

What is the Knowledge, Attitude and Practices of ABHA towards Nutrition?



Research Objectives

- To assess the knowledge and attitude related to nutrition of ABHA workers.
- To assess the practice towards nutrition of ABHA workers.

Methodology

This descriptive cross-sectional study was conducted to assess the knowledge, attitude and practices of ABHA workers of TPDDL towards nutrition

Study Area – ABHA workers residing in JJ clusters, villages and migrant settlement colonies in the North Delhi area.

Type of Study Design - Descriptive Cross Sectional

Study Population: A total of 841 ABHA's

Sampling Method - Convenience Sampling

Sample Size – 100 ABHA's

Study Tool – Through interviews conducted telephonically.

Data Analysis

The collected data was then entered and analyzed using Microsoft Excel. The categorical variables were then summarized in the form of proportions and tabulations. Further, graphical (pie and bar chart) analysis was performed to portray the results.

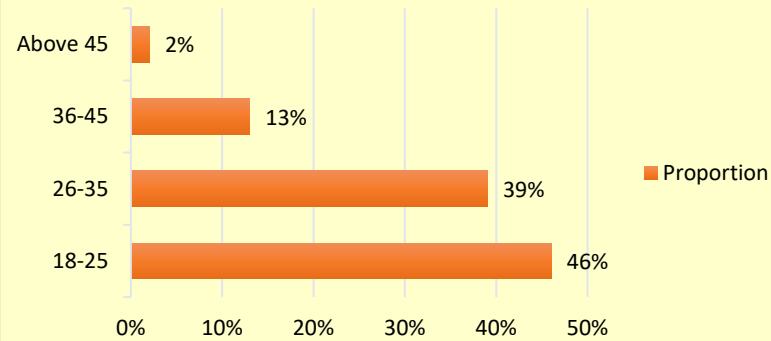
Ethical Consideration

The purpose of study was explained to the ABHA workers and informed consent was obtained from each participant. Confidentiality of information was maintained by omitting any personal identifier from the interview. All the participants were informed priorly, that this was a voluntary study and they could withdraw from their participation in the study at any stage.

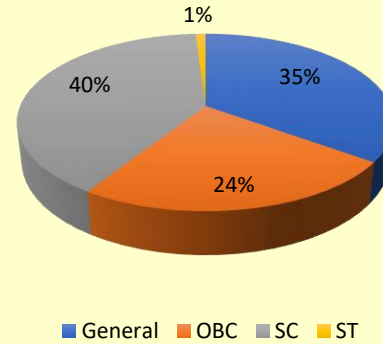
Results

Section 1 : Background of ABHA

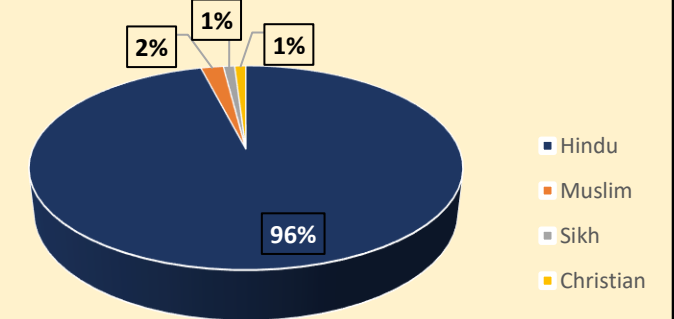
AGE GROUP



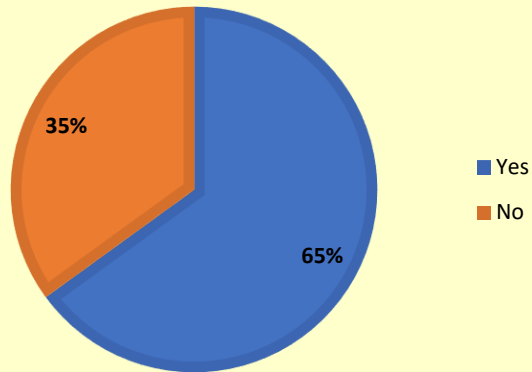
CASTE



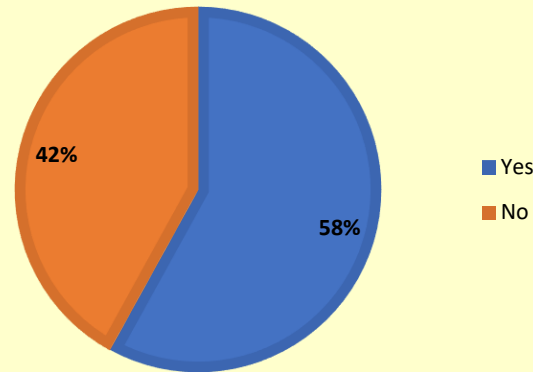
Religion



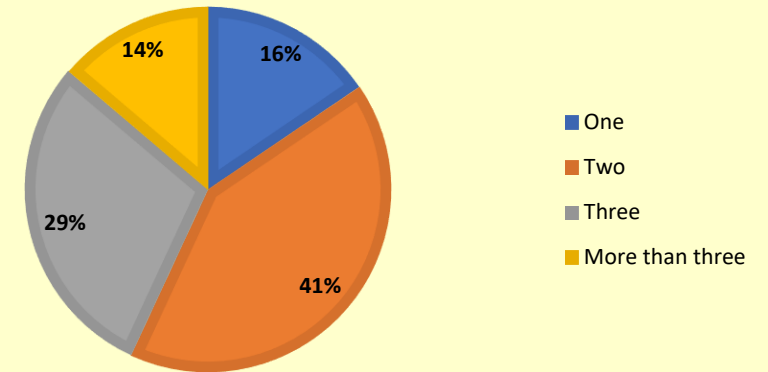
MARITAL STATUS



CHILDREN STATUS

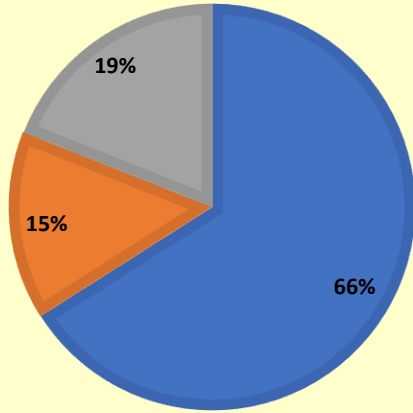


NUMBER OF CHILDREN



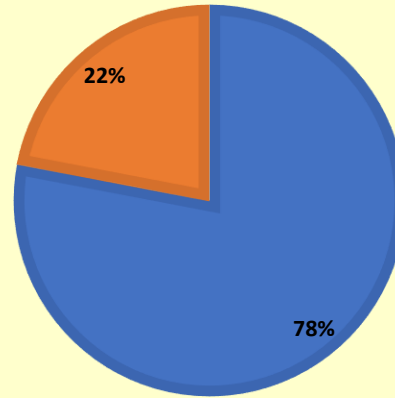
FAMILY TYPE

■ Nuclear ■ Extended ■ Joint



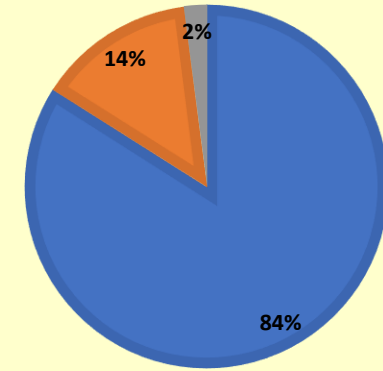
OCCUPATION

■ ABHA ■ ABHA +



MONTHLY FAMILY INCOME

■ Upto 20k ■ 20-30k ■ 30-40k



Education Status

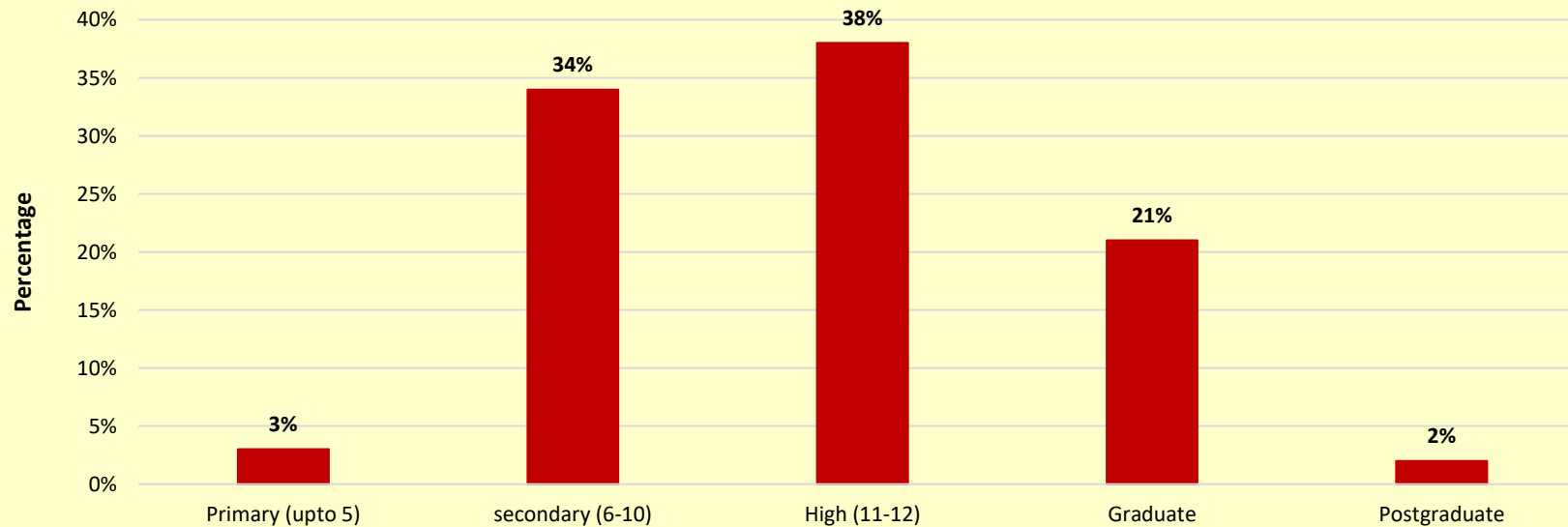


Table 1: Role in Preparation of Meals		
S.No:	Parameter	Percentage
1	Responsible for cooking meals in family *	
	Yes	88
	No	12
2	Responsible in menu decision *	
	Yes	74
	No	26
3	Responsible for deciding the grocery items required *	
	Yes	76
	No	24
* Required Question		

To understand how the ABHA workers had a relation with the food being prepared in their houses, three questions were asked for that.

Only 12% of the ABHA's did not have any role in preparing meals for their household.

74% of the respondents were responsible in deciding the meals for their family .

76% of the respondents were responsible in deciding the variety of grocery items to be brought as required.

Section 2 : Knowledge on Nutrition

Basic Nutritional knowledge

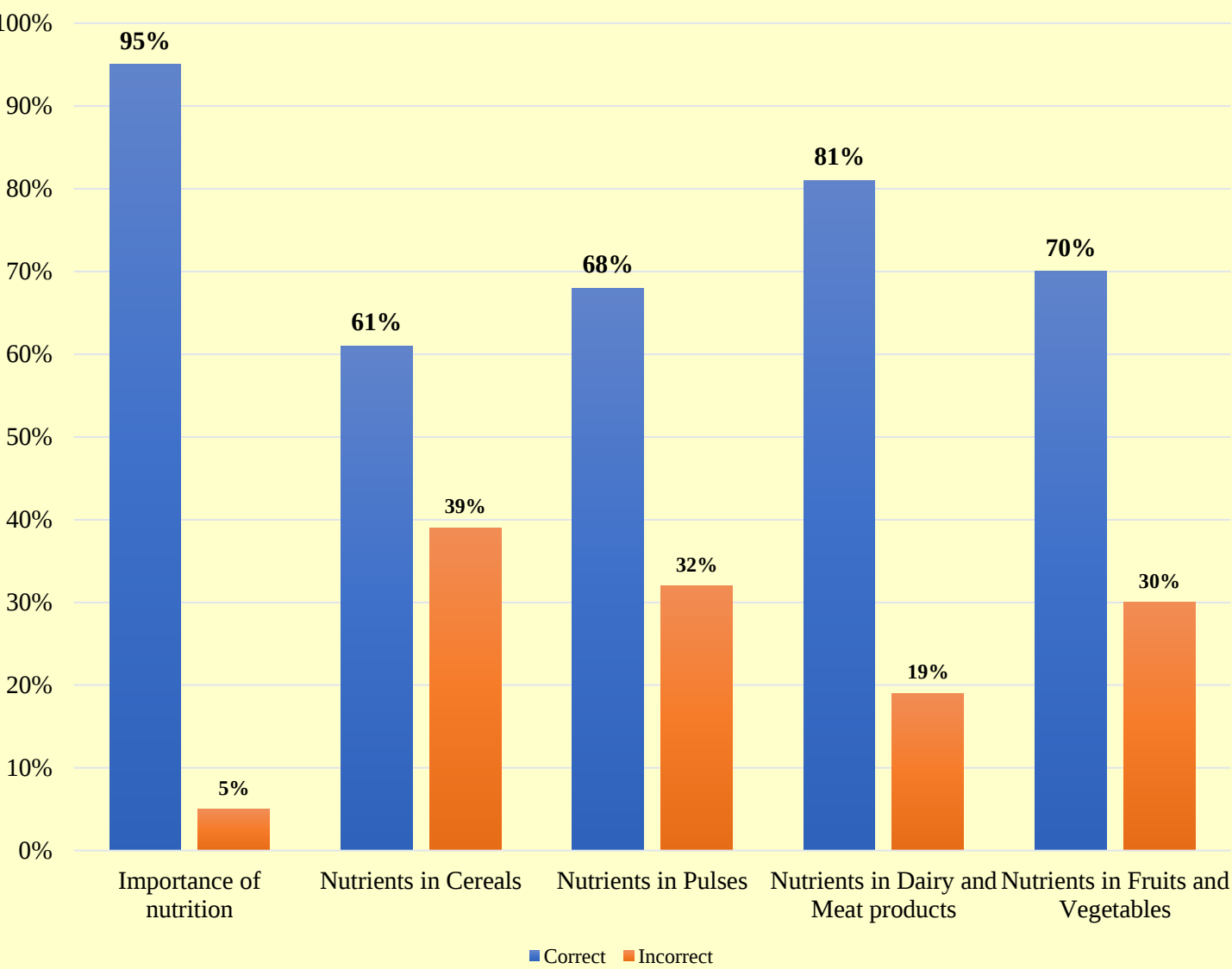
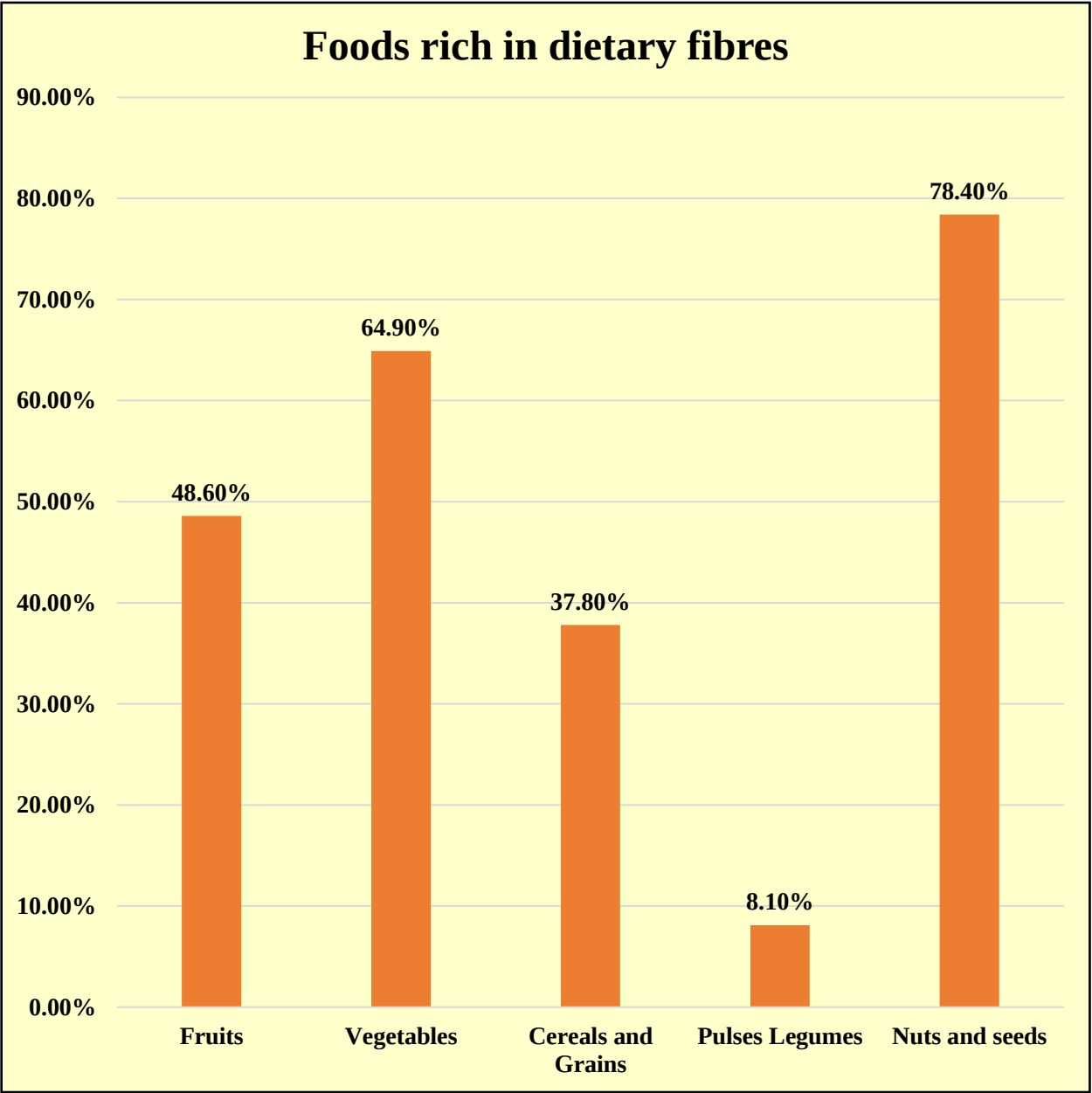


Table 2 – Classification of Food groups based on nutrients		
Food Groups	Major Nutrients	Other Nutrients
Cereals and Grains	Carbohydrates and fats	Proteins, Vitamin B complex, Fibre, Minerals, Calcium and Iron
Pulses	Proteins	B Complex vitamins, fibre, fat
Diary and Meat Products	Proteins	Calcium, Iron, Iodine, Vitamins, Fat
Fruits and Vegetables	Vitamins and Minerals	Antioxidant, fibres, sugar
Source – Manual on Dietary Guidelines for Indians, NIN, ICMR, 2011		

Table 3 - Dietary fibres related knowledge			
S.No:	Knowledge on	Frequency	Percentage
1	Know about dietary fibres *		
	Yes	41	41
	Maybe	16	16
	No	43	43
2	Food's rich in dietary fibres (n=37) #		
	Fruits	18	49
	Vegetables	24	65
	Cereals and Grains	14	38
	Pulses Legumes	3	8
	Nuts and seeds	29	78
3	Function of Fibres (n=38)		
	Correct	13	34
	Incorrect	25	66
* Required question # Multiple Responses possible. Total percent may add up to more than 100%			



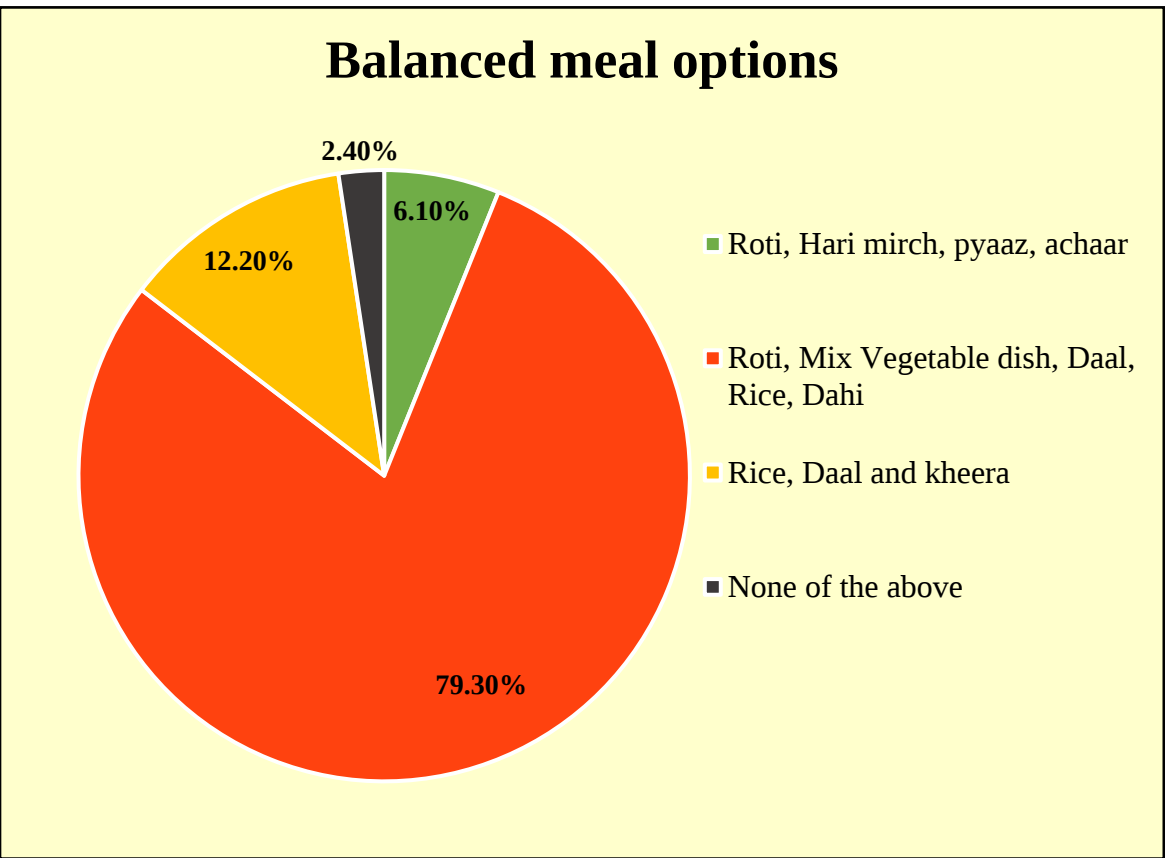
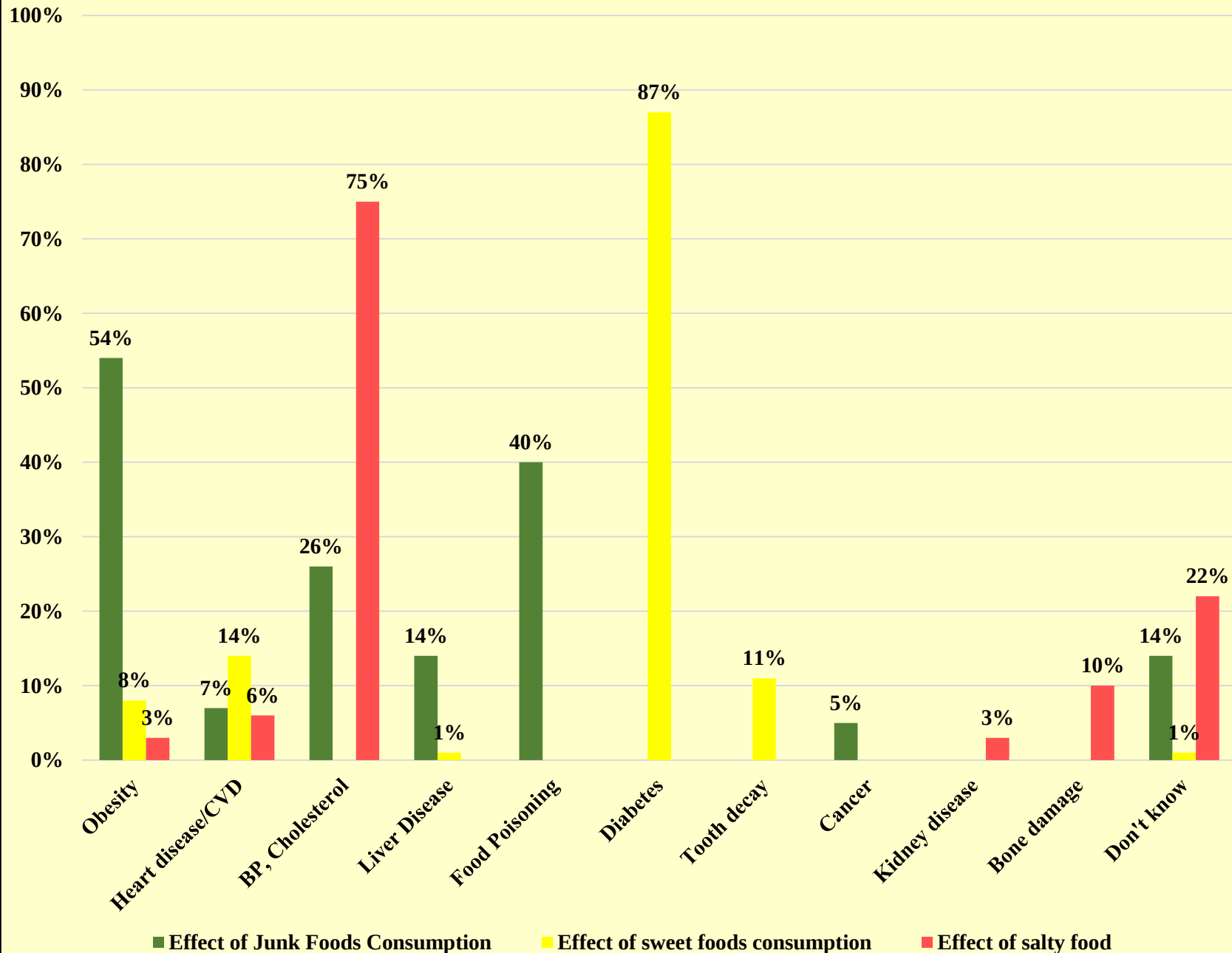


Table 4 - Balanced Diet related knowledge			
S.No:	Knowledge on	Frequency	Percentage
1	Knowledge Balanced Diet *		
	Yes	63	63
	Maybe	29	29
	No	8	8
2	Role of Balanced Diet (n=72)		
	Growth	19	26
	Energy	36	50
	Healthy no disease	55	75
3	Which of these is a well-balanced meal (n=82)		
	Roti, Green chillies, Raw Onion, Pickle	5	6
	Roti, Mix Vegetable dish, Dal, Rice, Curd	65	80
	Rice, Dal and Raw Cucumber	10	12
	None of the above	2	2
* Required question			

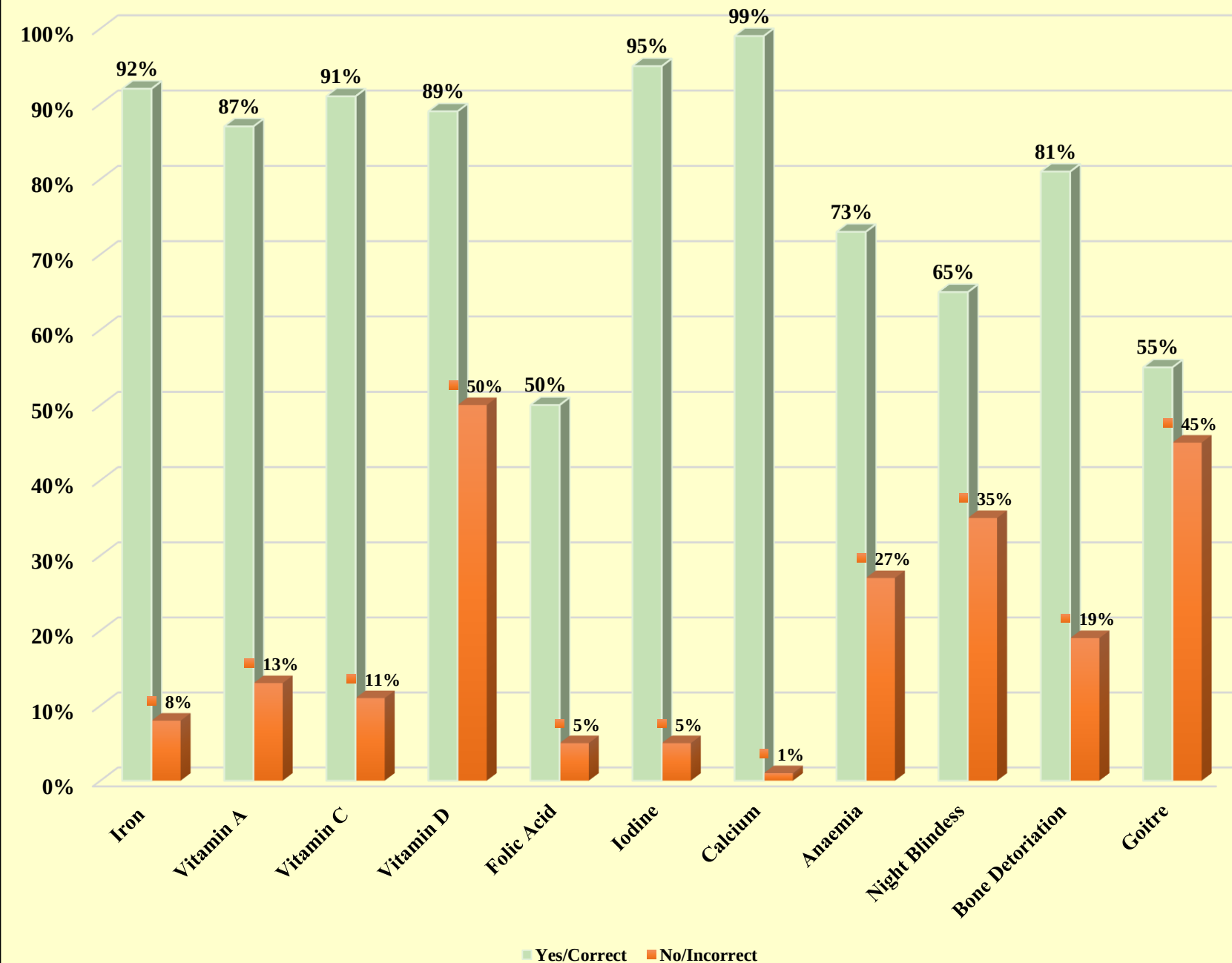
Knowledge on Overnutrition



To assess the knowledge regarding overnutrition, 3 questions were asked on the effects of excess consumption of junk/fast foods, sweet and salty foods respectively.

It was found that obesity is the main effect due to consumption of junk foods (54%), diabetes is the main effect due to consumption of excessively sweet food items (87%) and high BP and Cholesterol levels as the effect of excess consumption of salty food items (75%).

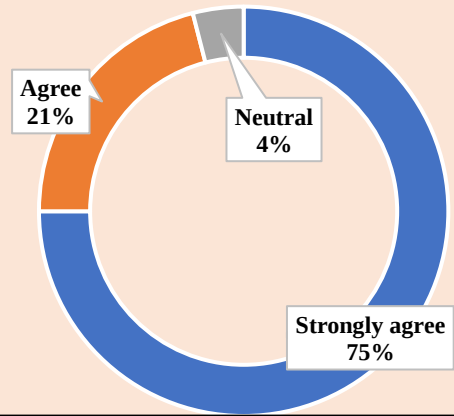
Knowledge of micronutrient deficiencies



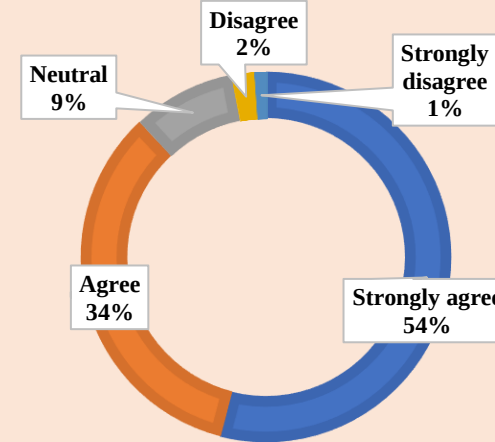
In the column chart represented on the left side, to assess the micronutrient deficiencies, data collected through 11 questions are displayed. The first seven of these questions dealt with the awareness of the following micronutrient deficiencies – Iron, Vitamin A, Vitamin C, Vitamin D, Folic acid, Calcium and Iodine.

Section 3 : Attitude on Nutrition

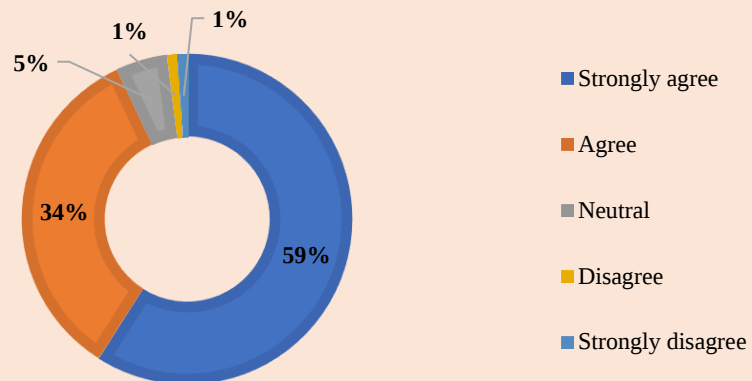
**Consumption of Balanced diet keeps us healthy
and reduces the risk of disease**



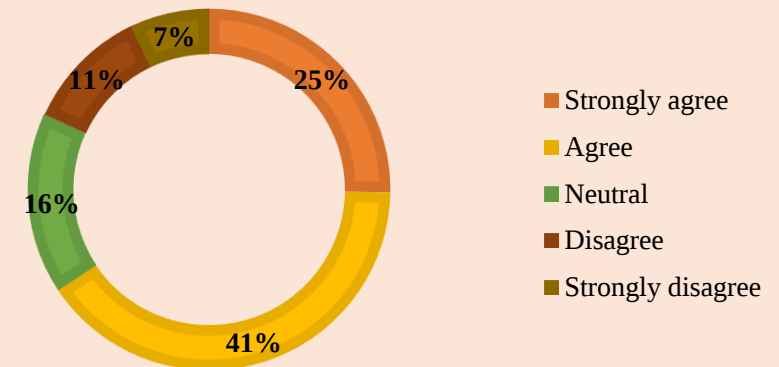
**BALANCED MEALS SHOULD BE
PREPARED ALWAYS**



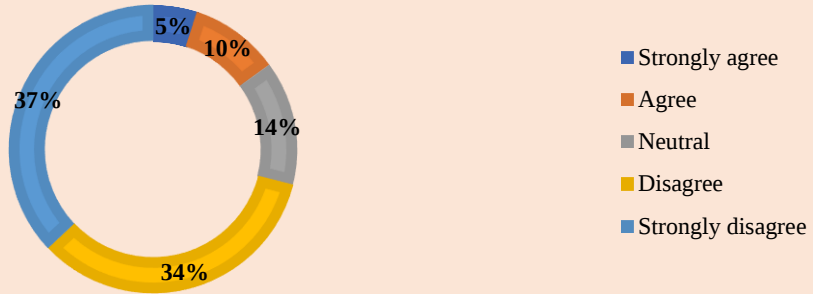
HAVING 3 MEALS A DAY IS IMPORTANT



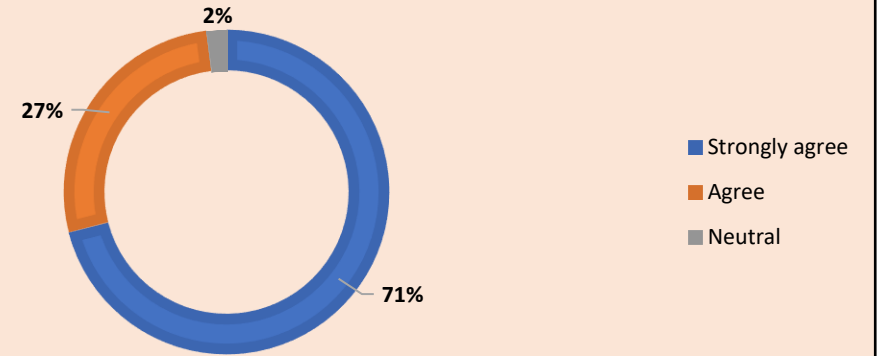
**THERE WILL BE HARM IN SKIPPING
MEALS**



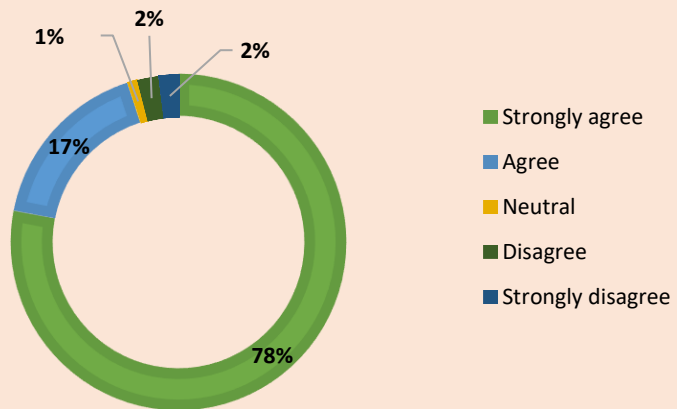
ITS FINE TO MUNCH ON SNACKS OFTEN IN A WEEK



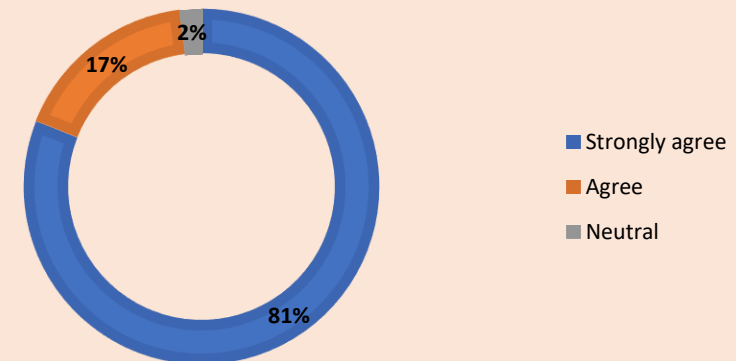
ITS NECESSARY TO EAT FRUITS AND VEGETABLES DAILY



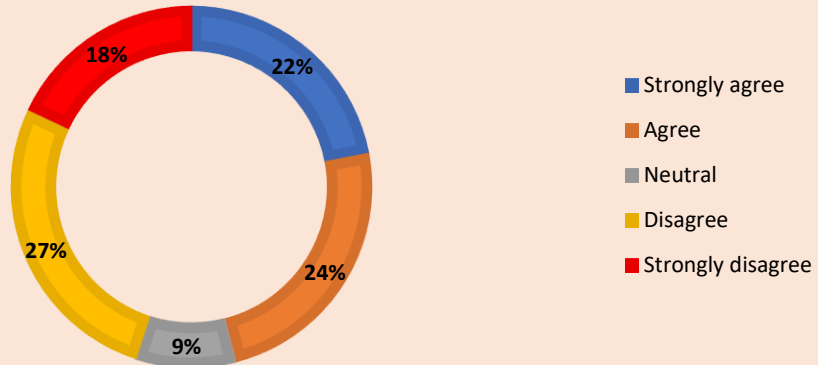
WE SHOULD CONSUME DAIRY PRODUCTS EVERYDAY



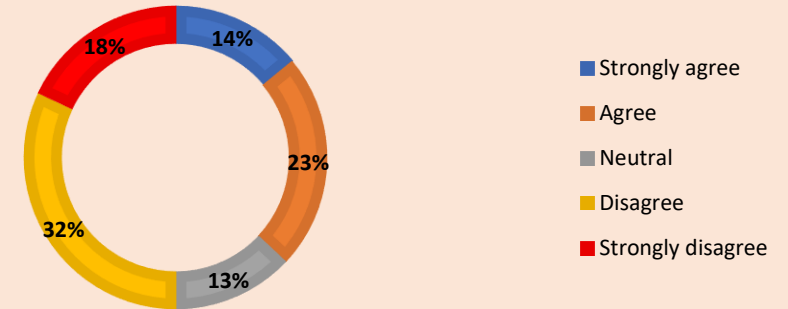
ITS IMPORTANT TO HAVE CEREALS AND GRAINS DAILY



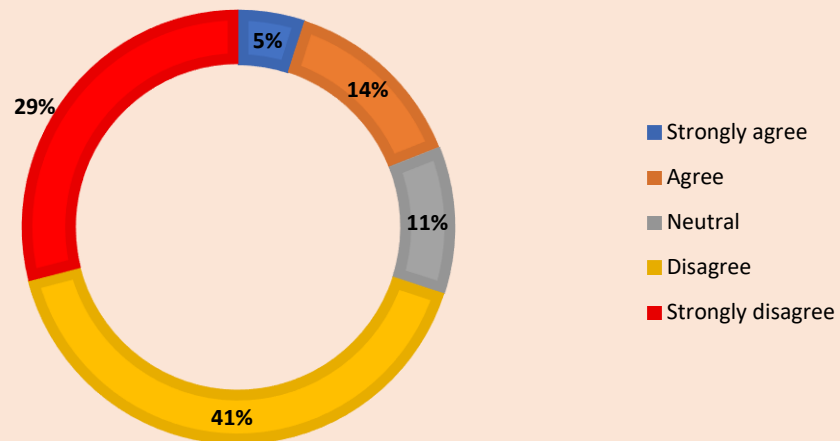
PULSES AND LEGUMES NEED NOT TO BE CONSUMED DAILY



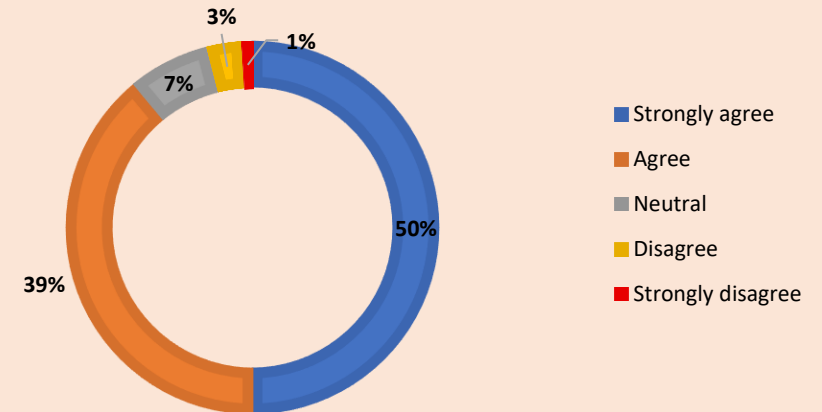
CHIPS AND BISCUITS SHOULD BE OFTEN GIVEN AS SNACKS



SOFT DRINKS ARE TO BE CONSUMED OFTEN (3-4 TIMES A WEEK)

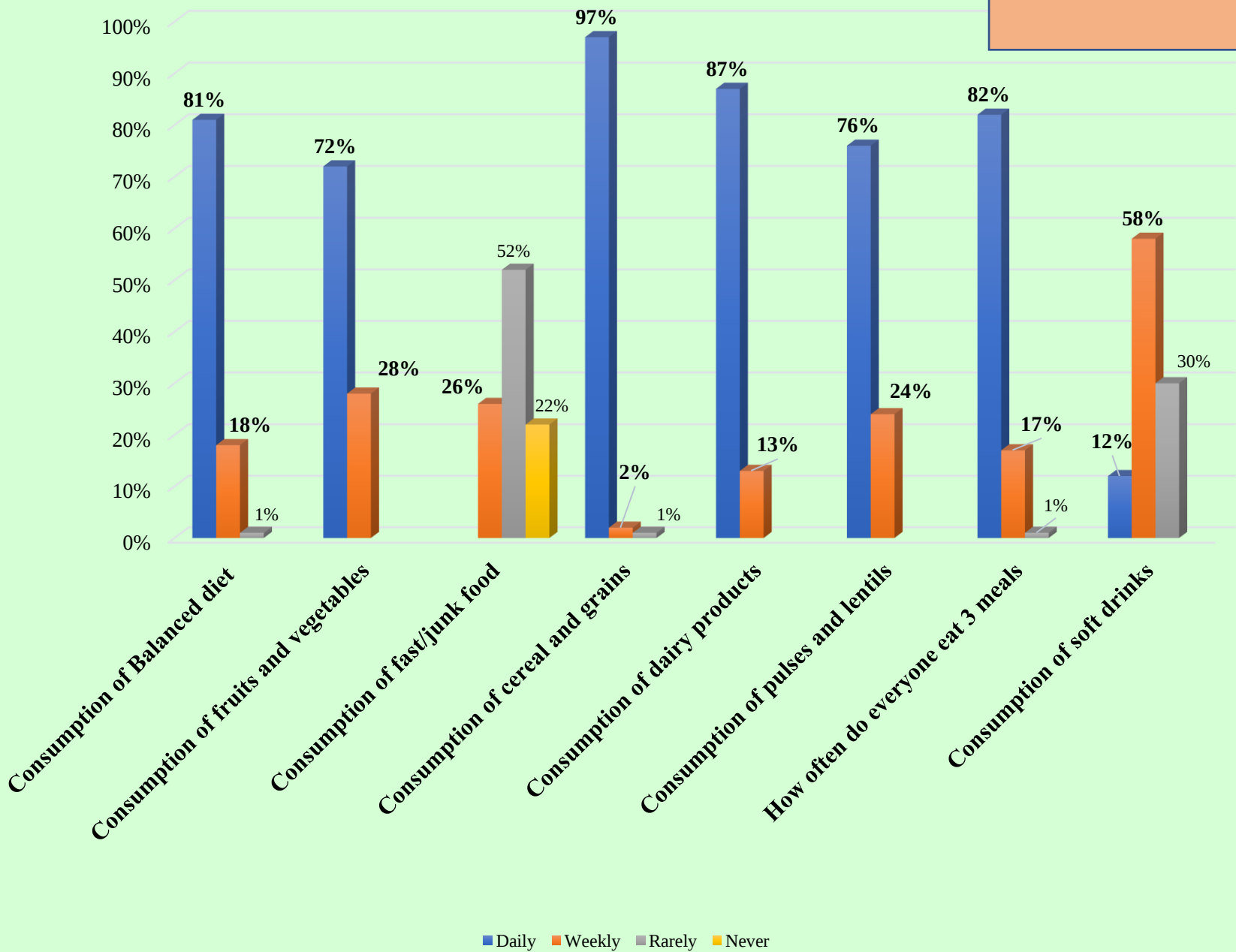


YOU ARE INTERESTED AND WILLING TO KNOW MORE ABOUT BALANCED MEALS AND ITS PREPARATION



Practices related to Nutrition

Section 4 : Practices on Nutrition



The column chart shown in the figure represents all the 8 parameters covered under the practice section.

Discussion

Around one fourth of the whole population of the world is tackling with the several forms of micronutrient deficiencies.[6] In the period of 2014-16, it was approximately estimated that 14.5% population of India amounting to 19.7 crore Indians were undernourished as per the report of Food and Agriculture organization.

More the knowledge the population have they been better equipped to make well informed decisions about the nutrition they are gaining and what produce they should be consuming appropriately.

The aim of this study was to assess the nutrition related knowledge, attitudes and practices of the ABHA workers. According to the findings, the respondents' level of knowledge on the basic food groups, importance and role of balanced diets was acceptable.

The results showed that the knowledge and understanding about the role of dietary fibres was comparatively weak as compared to other nutrients which they more easily identified in the food groups. Similarly, the knowledge of junk and fast foods was satisfactory and major of them were aware of at least of one harmful consequence.

It was also observed that many were aware of the common micronutrient deficiencies but they were not as much aware of the diseases associated with them.

Thus, education on nutrition is required to improve further knowledge through awareness programs and initiatives.

It was found in a study done in Sri Lanka that with better education to women, they had higher knowledge of nutrition related to nutrition and with better nutritionally beneficial practices and attitudes they had comparatively more knowledge of nutrition thus proving that knowledge, practice and attitude go hand in hand.

Thus it can be said with nutrition knowledge there can be a positive change in the behaviour and dietary practices.

Conclusion

With strong emphasis on increasing nutrition related knowledge, the attitudes and practices can be improved as well, reducing the burden of both forms of malnutrition.

Promotion of more rigorous healthy nutrition awareness initiatives and campaigns focussing especially on the women of reproductive age group is recommended. Nutrition education can be made mandatory as part of all training programs for household and women.

References

1. Nutrition, WHO, Accessed on 1 June 2021, <https://www.who.int/health-topics/nutrition>.
2. Manual A. Dietary guidelines for Indians. Nat Inst Nutrition, Second edition. Hyderabad, India. 2011:89-117, <https://www.nin.res.in/downloads/DietaryGuidelinesforNINwebsite.pdf>)
3. Maleta K. Undernutrition. Malawi medical journal: the journal of Medical Association of Malawi. 2006 Dec;18(4):189., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3345626/>
4. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4) 2015-16 India. IIPS. Mumbai; 2017.
5. Ritchie H, Roser M. Micronutrient deficiency. Our World in data. 2017 Aug 11., <https://ourworldindata.org/micronutrient-deficiency>
6. Gonmei Z, Toteja GS. Micronutrient status of Indian population. The Indian journal of medical research. 2018 Nov;148(5):511., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6366258/>
7. Vitamin A deficiency, Accessed on 5 June 2021 <https://data.unicef.org/topic/nutrition/vitamin-a-deficiency/>.
8. Ministry of Health and Family Welfare Government of India. Comprehensive National Nutrition Survey 2016-2018. Ministry of Health and Family Welfare Government of India. New Delhi; 2019. Available from: <https://nhm.gov.in/WriteReadData/l892s/1405796031571201348.pdf>
9. Muliylil DE, Rose A, Senthamizh SV, Chatterjee T, Helan J, Kang G, Muliylil J. Prevalence and risk factors of Vitamin A deficiency in children and women of childbearing age in a Southern Indian Tribal Population: A cross-sectional study. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine. 2019 Apr;44(2):162., <https://www.ijcm.org.in/article.asp?issn=0970-0218;year=2019;volume=44;issue=2;page=162;epage=165;aulast=Muliylil>
10. Rammohan A, Awofeso N, Robitaille MC. Addressing female iron-deficiency anaemia in india: is vegetarianism the major obstacle? International Scholarly Research Notices. 2012;2012., <https://www.hindawi.com/journals/isrn/2012/765476/>).
11. Kishore S, Singh M, Jain B, Verma N, Gawande K, Kishore S, Aggarwal P, Verma SK. A study to assess prevalence of anaemia among beneficiaries of Anaemia Mukta Bharat Campaign in Uttarakhand. Journal of Family Medicine and Primary Care. 2020 Mar;9(3):1691. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7266259/><https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7266259/>
12. Kapil U. Health consequences of iodine deficiency. Sultan Qaboos University Medical Journal. 2007 Dec;7(3):267. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3074887/>
13. Pandav CS, Yadav K, Srivastava R, Pandav R, Karmarkar MG. Iodine deficiency disorders (IDD) control in India. The Indian journal of medical research. 2013 Sep;138(3):418., <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3818611/>
14. Nutrition International, ICCIDD, AIIMS (New Delhi) and Kantar, 2019. India Iodine Survey 2018-19 National Report, New Delhi, India, https://www.ign.org/cm_data/2019-INDIA-IODINE-SURVEY-2018-19_FINAL-REPORT.PDF
15. Harinarayan CV, Akhila H, Shanthisree E. Modern India and Dietary Calcium Deficiency—Half a Century Nutrition Data—Retrospect—Introspect and the Road Ahead. Frontiers in Endocrinology. 2021 Apr 6;12:125., <https://www.frontiersin.org/articles/10.3389/fendo.2021.583654/full>

Thank You