

## STUDY ON DIETARY HABITS AND ACTIVITY PATTERN OF SELECTED ADULTS IN TIRUPATI

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### ABSTRACT

Recently studies showed that globally, more than 1.8 billion adults are overweight and in that around 650 million are obese. India is one among the most widely recognised countries which are identified with way of life today as being overweight. Obesity or overweight leads to heart diseases, Diabetes Mellitus, Hypertension etc. Objectives: Adulthood is a period where we have to pay at most attention to healthy nutritional diet. Preventive measures through assuring the nutritional status of adults such as anthropometric, dietary survey, food consumption pattern, nutritional awareness, physical activity and alertness about diseases will assist the community from being overweight and thus the occurrences of metabolic disorders. Methods: zone chosen for the conduct of the study was Tirupati and based on the number of subjects required, their age profile; willingness to participate in the study; their health condition etc., a private company which was willing was selected. The subjects chosen were in the age group of over 30-40 years. The selection was carried out using the purposive sampling technique. Results: The data indicates that some adults are in the border line of non-communicable diseases such as overweight or obesity, cardio vascular diseases, Type 2 diabetes and hypertension. Conclusion: This could be rectified through regular practice of consuming a nutritious and appropriate diet in conjunction with physical exercise routine.

**Key Words: Diabetes, Overweight, Nutritional awareness, Physical activity, Food consumption.**

### I. INTRODUCTION

With the increasing age, increases the chances and frequency of diseases or disorders (NIH, 2020). We are always flooded with importance of nutrition, health and wellbeing messages regularly and if we pay little attention and make little effort in following them, there is a possibility that it will help in reduction of health problems. For example, obesity, heart diseases, hypertension and diabetes[1]. Most of risk factors in the worldwide are the weight issues like of non-transmittable maladies in middle age is among asians[2]. The adulthood is the bridge between younger and older adulthood that is the third quarter of the average life span of human being [3]. Adulthood is a period to pay attention towards healthy nutritional diet for a healthy life. Globally, all the non-communicable diseases usually have their peak during this period. Preventive measures through assessing the nutritional status of adults and diet counselling will lend a hand to the community in preventing the occurrence of non-communicable diseases. Therefore, considering the health issues which are critical to the wellbeing and the way of life in adulthood so, making recommendations for their eating

practices, diet, exercise and mental wellbeing are considered to be the important components of the preventive health strategy for adults.

## II. OBJECTIVES

1. Acquire information on socio economic status of selected adults.
2. Acquire information on physical activity of the selected adults.
3. Assess the nutritional status of the selected adults through anthropometric measurement.
4. Study the dietary perspective of the selected adults and make recommendations.

## III. MATERIALS AND METHOD

The zone chosen for the study was Tirupati. It was selected due to the ready availability of the required subjects and their willingness to cooperate and participate in the study. The company chosen was college. The subjects chosen were in the age group of over 30-40 years covering both genders and utilizing purposive sampling technique. Eighty two subjects over the age of 30-40 from different branches and division of the organization were selected for the study. The subjects worked in general working hours. The hours of work are eight hours. The adults aged between 30-40 years were shortlisted by the author and the same was communicated to each department. According to the scheduled timing, the interview schedule was prepared for each day and thus the target groups (of age between 30-40 years) were interviewed by the researcher.

Details regarding socio economic status, physical activity pattern and nutritional status of selected adults were collected with the help of interview schedule in which the data are updated in the SPSS version 16. The researcher collected the information using direct personal interview and recorded the data given by the respondents.

Nutritional status was assessed by using selected anthropometric measurement indices. In this study, the anthropometric measurements indices collected were height, weight, and BMI for all the selected adults. Body mass index has been proposed as simple and valid metric for monitoring fitness/fatness [4]. BMI was computed for all the subjects from the height and weight measurements using the following equation

$$\text{BMI} = \frac{\text{Weight (in Kg)}}{\text{Height (in m}^2\text{)}}$$

In the current investigation, the stature and weight were estimated according to the conversion and BMI was determined and grouped by the proposals given by International Diabetes Federation [5]. Dietary assessment

The researcher followed the 24 hours recall method for collecting the diet. The food consumed was determined by using the 24 hour recall method by the food intake which recorded all foods and beverages consumed. From this the raw ingredients consumed were computed and the nutritive values of the foods were calculated. These values were then compared with RDA to assess the nutritional adequacy of the sub samples.

## IV. RESULT AND DISCUSSION

- A. Socio economic position of the selected adults.
- B. Physical activity of the selected adults.

**C. Nutritional status of the selected adults.**

**D. Dietary prospective of the selected adults.**

**A. Socio economic position of the selected adults.**

The Socio-economic status of the selected adults reveals that majority were of Hindu religion and were married, had completed graduation & were in the high income and some in nuclear family and were living with small family members and some in joint families.

**Table 1 Socio economic position of the selected adults (n=82)**

	Variable	Number	Percentage
<b>Age (yrs)</b>	30-32	23	28
	33-35	42	51
	36-38	17	21
<b>Religion</b>	Hindu	78	95
	Christian	0	0
	Muslim	4	5
<b>Education</b>	Higher secondary school	6	7
	Graduates	40	49
	Post-graduates	24	29
	MBBS/PhD	10	12
<b>Monthly Income</b>	<10000	30	37
	10000-20000	18	22
	20000-30000	8	10
	>30000	26	32
<b>Marital status</b>	Single/ Unmarried	30	37
	Married	52	63
<b>Type of Family</b>	Nuclear	54	66
	Joint	28	34
<b>No. of Family Members</b>	<3	10	12
	3-5	56	68
	5-8	16	20
	>8	0	0

**B. Physical activity of the selected adults**

Table 2 illustrates 29 percent (24 subjects) had the sedentary activity and 66 percent (54 subjects) were engaged in moderate activity and 5 percent (4 subjects). The results depict that the prevalence rate of non-communicable diseases like diabetes and hypertension was high in the sedentary workers than in the moderate and heavy workers. Sedentary life style, obesity, less physical activity and less exercise leads to non-communicable diseases.

**Table 2 Physical activity level of the selected adults**

Activity	Number	Percentage
Sedentary	<b>24</b>	<b>29</b>
Moderate	<b>54</b>	<b>66</b>

Heavy	<b>4</b>	<b>5</b>
Total	<b>82</b>	<b>100</b>

### C. Nutritional status of the selected adults

#### 1. Anthropometric details

##### a. Mean height, weight and BMI

The mean BMI was shown as 24 kg/m<sup>3</sup> among selected adults. The data showed that the selected adults were in slightly overweight category which indicates the minimum physical activity, slight knowledge on dietary pattern.

**Table 3 Mean height, weight and BMI of selected adults**

Parameters	Mean+SD (n=82)
Height (cm)	<b>160+10.6</b>
Weight (Kg)	<b>60+1.4</b>
BMI (kg/m <sup>2</sup> )	<b>24+3.43</b>

##### b. Body Mass Index

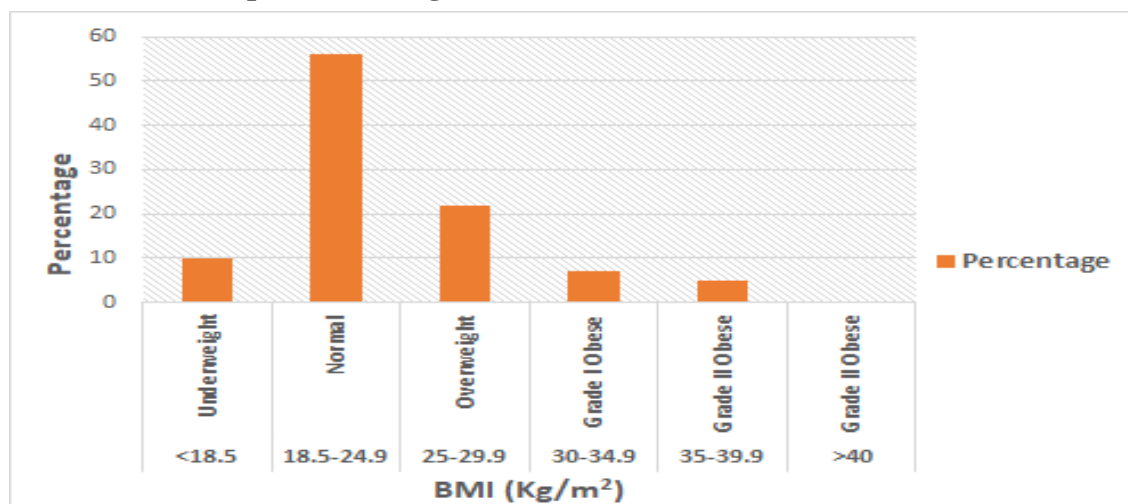
**Table 4 Classification of the selected adults according to body mass index**

Classification		Number	Percentage
BMI	Category		
<18.5	<b>Underweight</b>	<b>8</b>	<b>10</b>
18.5-24.9	<b>Normal</b>	<b>46</b>	<b>56</b>
25-29.9	<b>Overweight</b>	<b>18</b>	<b>22</b>
30-34.9	<b>Grade I Obese</b>	<b>6</b>	<b>7</b>
35-39.9	<b>Grade II Obese</b>	<b>4</b>	<b>5</b>
>40	<b>Grade III Obese</b>	<b>0</b>	<b>0</b>
Total		<b>82</b>	<b>100</b>

\*Global data base, (WHO, 2006)

Table 4 illustrates the classification of the adults according to the Body mass index categories recommended by WHO (2006). It is evident from the data that 56 percent (46 subjects) of the selected adults were in normal category of BMI (18.5-24.9), 10 percent (8 subjects) were in underweight category of BMI (less than 18.5) and 34 percent (38 subjects) were overweight and obese category of BMI (25-39.9) in which 22 percent are classified as overweight followed by 7 percent classified as obese I, 5 percent classified as grade II and 0 percent in Grade III obesity. The results of the BMI classification clearly point out that the majority of the subjects are either normal and overweight. The 34 percent of the overweight and obesity who are at risk of non-communicable diseases.

**Graph1 Percentage of selected adults and their BMI**



**c. BMI and physical activity analysis**

**Table 5 Correlation analysis of the BMI and physical activity of the selected adults (n=82)**

Category	BMI
Physical activity	<b>0.97*</b>
*Significant at 0.05% level	

Physical activity of the selected adults was strongly correlated with the body mass index (BMI). This data shows that the less physical activity and sedentary life style of some subjects was prevalent in the selected adults. This particular trend will lead to the incidence of metabolic disorders and non-communicable diseases.

**D. Dietary perspective of the selected adults**

Dietary surveys for assessing the dietary intake and the nutritional status of the population is very important for monitoring the nutrition status and to initiate the appropriate interventions.

**1. Dietary details**

Type of diet of the selected adults show that 73 percent were non-vegetarian. The selected adults consuming three meals per day were predominant. Ten percent of the selected adults had the habit of skipping one meal day and another 10 percent had a habit of skipping one meal per week. The eating habits of the selected adults highlight that out of 82 adults, 76 percent have the practice of eating with moderate speed and 10 percent of adults had quick eating habits. The quick eating habit might be due to time pressure or they may be eating quickly from childhood itself. One should always give time for the brain to judge the fullness and slow eating habits help in good digestion and reduces the risk of over eating and thus health problems like Diabetes, hypertension, obesity etc.

**Table 6 Dietary perceptive of the selected adults (n=82)**

Variables		Number	Percentage
<b>Type of Diet</b>	<b>Vegetarian</b>	<b>10</b>	<b>12</b>
	<b>Non-Vegetarian</b>	<b>60</b>	<b>73</b>
	<b>Ova-Vegetarian</b>	<b>12</b>	<b>15</b>
<b>Number of meals consumed</b>	<b>Two</b>	<b>6</b>	<b>7</b>
	<b>Three</b>	<b>62</b>	<b>76</b>
	<b>Four</b>	<b>12</b>	<b>15</b>
<b>Skipping Meal</b>	<b>Daily one meal</b>	<b>8</b>	<b>10</b>
	<b>Weekly one meal</b>	<b>8</b>	<b>10</b>
	<b>Weekly two meal</b>	<b>6</b>	<b>7</b>
	<b>None</b>	<b>60</b>	<b>73</b>
<b>Habit of fasting</b>	<b>A meal per day</b>	<b>8</b>	<b>10</b>
	<b>A meal per week</b>	<b>6</b>	<b>7</b>
	<b>A meal per week</b>	<b>12</b>	<b>15</b>
	<b>None</b>	<b>66</b>	<b>80</b>
<b>Habit of eating</b>	<b>Quick</b>	<b>8</b>	<b>10</b>
	<b>Moderate</b>	<b>62</b>	<b>76</b>
	<b>Slow</b>	<b>12</b>	<b>15</b>
<b>Quantity of water Consumption per day</b>	<b>&lt;4 glasses</b>	<b>12</b>	<b>15</b>
	<b>4-8 glasses</b>	<b>50</b>	<b>61</b>
	<b>&gt;8 glasses</b>	<b>20</b>	<b>24</b>
<b>Food Allergy</b>	<b>Brinjal</b>	<b>6</b>	<b>7</b>
	<b>Spinach</b>	<b>4</b>	<b>5</b>
	<b>Peanuts</b>	<b>1</b>	<b>1</b>
	<b>Soyabean</b>	<b>1</b>	<b>1</b>
	<b>cauliflower</b>	<b>1</b>	<b>1</b>
	<b>millets</b>	<b>1</b>	<b>1</b>
	<b>mayonnaise</b>	<b>1</b>	<b>1</b>
	<b>sugar</b>	<b>1</b>	<b>1</b>
	<b>none</b>	<b>66</b>	<b>80</b>

## 2. Food consumption pattern

Table 7 analyses the pattern of food consumption of the selected adults. It was found that rice and wheat were consumed as the prime food. Eighty five percent of adults consumed pulses, 68 percent of legumes were consumed on daily basis. Sixty three percent of adults consumed green leafy vegetables and 80 percent consumed vegetables on daily basis, but the quantity was less, 62 percent consumed roots and tubers also on a daily basis. Fifty to sixty percent adults consumed meat products on a daily basis and remaining consumed on

weekly basis. Egg consumption (59 percent) was greater than fleshy products (50-54 percent). The consumption of milk products was around 87 percent on daily basis. Seventy nine percent consume sugar and jaggery products.

**Table 7 Frequency of food consumption pattern of the selected adults.**

Food items	Daily		Weekly		Occasionally		Never		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cereals	71	87	6	7	4	5	1	1	82	100
Pulses	70	85	9	11	3	4	-	0	82	100
Legumes, nuts, seeds	56	68	22	27	4	5	-	0	82	100
Green leafy vegetables	52	63	29	35	1	1	-	0	82	100
other vegetables	66	80	14	17	2	2	-	0	82	100
Vitamin A rich fruits	54	66	19	23	8	10	1	1	82	100
Other fruits	49	60	21	26	11	13	1	1	82	100
Roots & Tubers	51	62	23	28	7	9	1	1	82	100
Milk	71	87	5	6	5	6	1	1	82	100
Sugar and Jaggery	65	79	9	11	7	9	1	1	82	100
Spices and Condiments	63	77	14	17	5	6	-	0	82	100
Egg	48	59	29	35	4	5	1	1	82	100
Poultry	43	52	26	32	12	15	1	1	82	100
Meat	44	54	22	27	15	18	1	1	82	100
Fish	41	50	14	17	23	28	4	5	82	100

### 3. Consumption of junk foods

From table 8 it was observed that 22 percent of the adults consumed fried items weekly basis and 73 percent of adults consumed occasionally. Other junk foods consumed by the selected adults were baked items (88 percent), chat items (80 percent), carbonated beverages (85 percent), pizza (82 percent), sweets (82 percent) respectively on occasional basis.

**Table 8 Consumption of junk foods by the selected adults**

Food items	Daily		Weekly		Occasionally		Never		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Baked items	1	1	6	7	72	88	3	4	82	100
Chat items	1	1	9	11	66	80	6	7	82	100
Fried items	2	2	18	22	60	73	2	2	82	100
Sweets	2	2	10	12	67	82	3	4	82	100
Pizza	-	0	5	6	67	82	10	12	82	100
Savories	-	0	6	7	64	78	12	15	82	100
Burger	-	0	5	6	64	78	13	16	82	100
Carbonated beverages	-	0	2	2	70	85	10	12	82	100

#### 4. Mean nutrient intake

Table 9 depicts the mean nutrient intake of the selected adults calculated from 24 hour recall survey.

**Table 9 Mean nutrient intake of the selected adults**

Nutrients	RDA*	Actual Intake Excess/Deficit nutrient intake
Energy (Kcal)	2400	2110-545
Protein (g)	60	62+2
Fat (g)	20	45+20
Carbohydrate (g)	300	320+75
Fibre (g)	25	20
Calcium (mg)	1000	698+188
Iron (mg)	29	23

**Dietary guidelines for Indians- manual, NIN, ICMR, 2010**

The data presented in table 9 reveals that all the nutrients consumed are adequate where as fibre and iron is slightly low.

#### CONCLUSION

The result of the current study has brought in view the dietary status of the selected adults. The data indicates that some of the adults were overweight or slightly obese putting on the verge of non-communicable diseases such as obesity, heart problems, hypertension, type II diabetes, etc. These can be rectified by decreasing the sweet and savoury consumption and regular practice of healthy and nutritious diet and appropriate diet and including some nutrition awareness camps, practicing suryanamaskara, pranayama, yoga in their day to day life.

#### CONFLICT OF INTEREST

There is no Conflict of Interest

#### ACKNOWLEDGEMENT

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