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Evaluation of Dietary Intake and Food Patterns of Adolescent Girls from Chandigarh and Adjoining States of India

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Abstract: ***Adolescent girls are the very important section of our society. Their nutritional status influences both the growth of nation as well as the growth of remaining population. Various internal and external factors such as food preference and availability, body weight perception and parental and peer influences the eating pattern of adolescent play important role in nutrition of girls. Skipping breakfast is also more seen in females. Poor nutritional status during adolescence leads to health outcomes at a later stage of life. Irregular Eating pattern is of major concern as it can leads to chronic non communicable diseases like diabetes, obesity, high blood pressure, cardiovascular disease and cancer later in life. The aim of the present study was to understand the nutritional status of adolescent girls and their dietary practices which is essential for planning and providing the comprehensive care. A survey was conducted on 1000 adolescent girl students of PG Govt. College for girls, Chandigarh hailing from Chandigarh and adjoining states of India. The present study reveals ahigh incidence of under-nutrition and dietary inadequacy in respects of energy, protein and micronutrients. Result clearly shows an exigent need for nutrition education program for female adolescent.***
Keywords: Adolescent girls, nutrition, food items, breakfast, health.

I. INTRODUCTION

The phase of adolescence is unique and is a link between childhood and adulthood. About 21% (about 243 million) of Indian population is adolescents [1]. Adolescent girls are the very important section of our society and their proper growth is very important for the development of country. During this period good nutrition is very important for their proper physical growth and cognitive development. Nutritional status of adolescent girls influences both the growth of nation as well as the growth of remaining population. Balanced diet is highly required to fulfil all these increased requirements. Diet of adolescent girls is highly influenced by dietary practices, cultural traditions and meal patterns [2].Various internal and external factors such as food preference and availability, body weight perception and parental and peer influences the eating pattern of adolescent [3]. Skipping breakfast is also more seen in females than males [4]. Poor nutritional status during adolescence leads to health outcomes like diabetes, obesity, high blood pressure, cardiovascular disease and cancer later in life [5]. Thus it's very important to know the dietary habit and food pattern of adolescent girl for planning and providing the comprehensive care. Therefore this study was done to understand the nutritional status of adolescent girls and their dietary practices and beliefs. The specific objectives of the present study were to find out nutrient intake of adolescent girls and to analyse the dietary habits of Adolescent girls. The present study revealed that the overall nutritional status in adolescent girls is not satisfactory and daily nutrient intake of adolescent girls was very less. The survey showed very low consumption of milk and milk products, animal products and fruits. Result clearly showed a need for nutrition education program for female adolescent. Target of education should be on encouraging daily breakfast consumption and pulses.

II. MATERIALS AND METHODS:

The present study was conducted on 1000 girl students of Post Graduate Govt. College for Girls, Sector-11, Chandigarh. Twenty students were selected and trained about the various parameters. Through a Questionnaire these students filled different aspects under study. Then the data was interpreted and analyzed. The sample Questionnaire is as follows:

A. Food Habits Of Adolescent Girls-1sample Questionnaire

1) Name
2) Age

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B. Living Arrangement
1) With Parents
2) With Guardians
3) Paying Guest
4) Hostel

C. Eating Companions
1) Eats with Family Members
2) Eats with Peers
3) Eats Alone

D. Do You Have Breakfast Today
1) Yes
2) No

E. How many times in a week you skip Meal?

S.No.	Item	Daily	4-6 Times/Week	1-3 Times/Week	Nil
1.	Milk				
2.	Tea/Coffee				
3.	Soft Drinks				
4.	Wine/Beer				
5.	Fruit Juice (Fresh)				
6.	Package Food				
7.	Snacks				
8.	Sandwiches				
9.	Pizza				
10.	Pulses				
11.	Bread				
12.	Chips				
13.	Meat Products				
14.	Dairy Items				
15.	Fish				
16.	Rice				
17.	Cake/Pastries				
18.	Cooked Vegetables				
19.	Raw Vegetables				
20.	Egg				

Date Signature

III. RESULT AND DISCUSSION

The present survey was conducted on 1000 girls hailing from Chandigarh and its adjoining states (Punjab, Haryana, Chandigarh, Uttar Pradesh, Uttaranchal, Himachal Pradesh and Delhi), studying in Post Graduate Government College for Girls, Sector-11, Chandigarh. 72% girls were living with their parents, 23% were staying in hostel, 2% were living with guardian and 3% were staying as paying guests Fig. 1, Fig. 2). The parents influence the development of their adolescent girls. The strong bond between adolescent-parent showed pronounced effects on cognitive, social and emotional functioning and is associated with fewer mental

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health problems and enhanced social skills. Adolescents require stability, support and unconditional love in a home environment while becoming independent physically and emotionally. Flexible relationship between parents and teenager is important in the changing environment. Enhanced growth rate and changes in body composition associated with puberty caused increase in nutritional needs. Optimal nutrition is a requisite for attaining full growth potential. During the survey it was noticed that the adolescent food choices and nutrient intake were affected by numerous factors like

A. Quest for independence
B. Acceptance by peers
C. Increased mobility
D. Greater time spent in work activities
E. Preoccupation

These caused erratic and unhealthy eating behaviours in the adolescence age. The adolescents often fail to meet dietary recommendations for nutrient intakes as they receive higher proportion of energy from fat and sugar and have a lower intake of a vitamin A, folic acid, fibre, iron, calcium, vitamin D, and zinc [6]. Decreased bone density, increase fracture risk during adolescence and risk of developing osteoporosis in later life were reported [7]. There is a transition period during adolescence age and knowledge is most important tool in handling various issues for healthy growth. Dietary pattern research has great potential for use in nutrition policy as it demonstrates the importance of total diet in health promotion [8]. In the present study it was recorded that 70% girls ate in the company of their family, 22% ate with their peers and 8% ate alone (Fig. 3, Fig. 4). The role of nutrients in preventing various chronic diseases, including obesity, coronary heart disease, cancer, stroke, and type 2 diabetes was illustrated by previous workers [9]. Healthy eating habits should be established and maintained during adolescence age for better and healthy development. Adolescence is the period when peer pressure affect their eating behaviour and result in either over-eating, extreme dieting, under-eating and bringing up food on purpose. Anxiety, worry, loneliness and difficulty in managing family relationships are all factors that can lead to a refusal to eat or to excessive eating. Stress and boredom often result in the compulsive eating of certain foods, called ´bingeing´. It was recorded that 16% girls did not had their breakfast due to various reasons like

A. Lack of time
B. Lack of appetite
C. Stress of education
D. fasting

Girls skipped their meals frequently which adversely affect their health. In the present study it was found that breakfast was skipped once in week by 44%, 2-3 times in the week by 34%, 4-5 times in the week by 10% and daily by 12% girls (Fig. 9, Fig. 12). 47% girls skipped breakfast due to lack of time. Actually the girls do not manage their time properly. May be sleeping late, working till late hours, gossiping for long hours, engaged in social networking site and stress are the causes of waking up early and getting late for the breakfast. 22% girls gave fasting as one reason of skipping breakfast while 21% girls advocated lack of appetite to be the reason. Stress of education is the cause of skipping breakfast for on 10% girls. Therefore girls skipped breakfast basically due to lack of time. Lunch was skipped once in week by 52%, 2-3 times in the week by 29%, 4-5times in the week by 5% and daily by 14% girls. 49% girls skipped lunch due to fasting, 29% due to lack of time, 12% due to lack of appetite and 10% due to stress of education (Fig. 10, Fig. 13). Dinner was skipped once in week by 58%, 2-3 times in the week by 23%, 4-5times in the week by 6% and daily by 13% girls. 52% girls skipped lunch due to fasting, 25% due to lack of appetite, 13% due to lack of time and 10% due to stress of education (Fig. 11, Fig. 14). Daily protein intake in the form of milk, egg, milk products and pulses is not there in more than 50% girls which are quite alarming. Less protein intake slows down the metabolic processes.

It was analyzed that basically girls skipped their meals in order to do fasting. Fasting causes dehydration, migraines, severe headaches, dizziness, nausea, sleep disorders, daytime drowsiness, alertness as well as irritability and physical exhaustion. *Song et al.*, emphasised that monitoring dietary behaviours of adolescents, especially in a society experiencing a nutrition transition, was necessary in order to identify both negative and positive changes in respect of risk factors for nutrition-related chronic diseases as well as for under nutrition. Girls who are extreme dieters lose all their reserves of fat, which nearly always causes them to stop menstruating [5]. Body is unable to benefit from all the nutrients it needs if one limit to eating only certain types of food, then body is unable to benefit from all the nutrients it needs. The dietary iron needs increase, when the girls start menstruating, because iron is

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lost in their menstrual blood. This problem was experienced even during blood donation camps in the college where more than 50% students failed to donate blood due to either low haemoglobin or underweight. Girls play pivotal role in the development of society and therefore, healthy and intelligent adolescent youth is an asset for nation. High intakes of the 'healthy' pattern of food which included whole grains, fruit, vegetables, legumes and fish was positively associated with female gender, greater maternal education, better family functioning and being in a two-parent family and was inversely associated with television viewing [10,11].

IV. CONCLUSION

What we eat is central to our health. The nutrients present in food enables the cells which are present in our bodies to perform their necessary functions for the growth, development and maintenance. If a nutrient is not present, its deficiency therefore leads to human health affect and may also decline in human health can be seen. When nutrient intake does not regularly meet the nutrient needs dictated by the cell activity, the metabolic processes slow down or even stop. Eating frequent fast food meals causes teens and young adults to gain more weight and face an increased risk of developing insulin resistance. Obesity and diabetes are on the rise in people who take fast foods frequently. Fast food is a kind of addictive; in spite of knowing that it is unhealthy, most of the people get hooked on to it and continue consuming it in an uncontrolled way. The more it is consumed, the more difficult it would be to opt for healthy foods. To start with, a simple change that one could make is to successively reduce the frequency of eating fast food or junk food and eat more frequently home-cooked food, including plenty of fresh foods and vegetables. Fast food is deficient in dietary fibre and essential micro-nutrients like vitamins and minerals which are required for body to stay healthy. Making nutritional information available at fast food restaurants helps the consumers to order low calorie items which would be more beneficial and healthful. Education should be provided about nutritive values of various foods and making healthy food choices. Hence the present study revealed a high incidence of under-nutrition and dietary inadequacy in respects of energy, protein and micronutrients. Result clearly shows a need for nutrition education program for female adolescent. Target of education should be on encouraging daily breakfast consumption and pulses. Education should be provided about nutritive values of various foods and making healthy food choices. Encouragement should be given to increase their fruits and vegetable consumption Promoting healthy nutrition behaviours still relies mostly on health education techniques that try to motivate people to adopt more healthy lifestyles Interventions to promote healthy eating should address the most important and changeable determinants of healthy eating. To promote healthy eating, people should be motivated to do so, should be confident about their abilities and should preferably be exposed to environments that offer them easy opportunities.

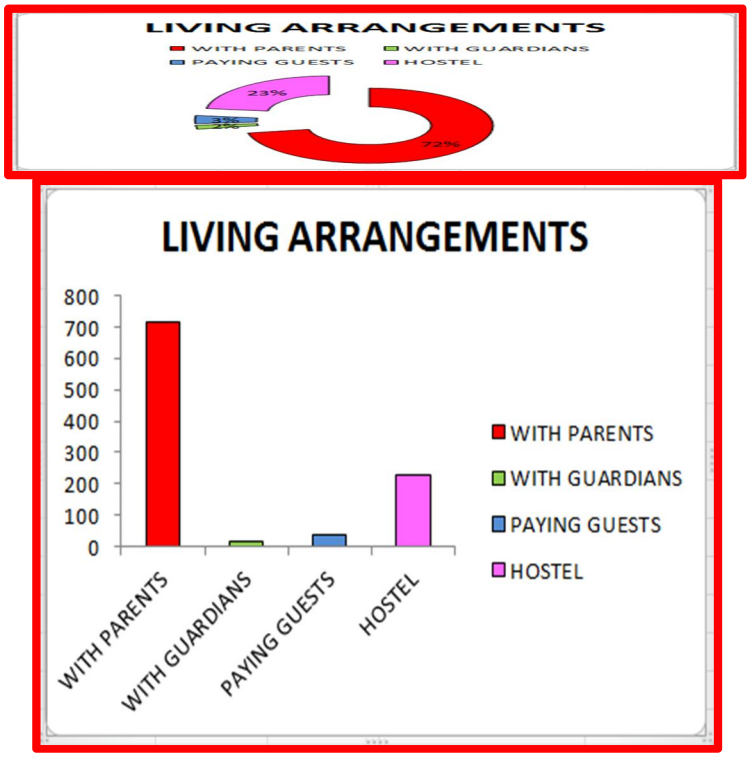

Fig. 1 and 2 Analysis of living arrangement

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Fig. 3 and 4 Analysis of eating companions

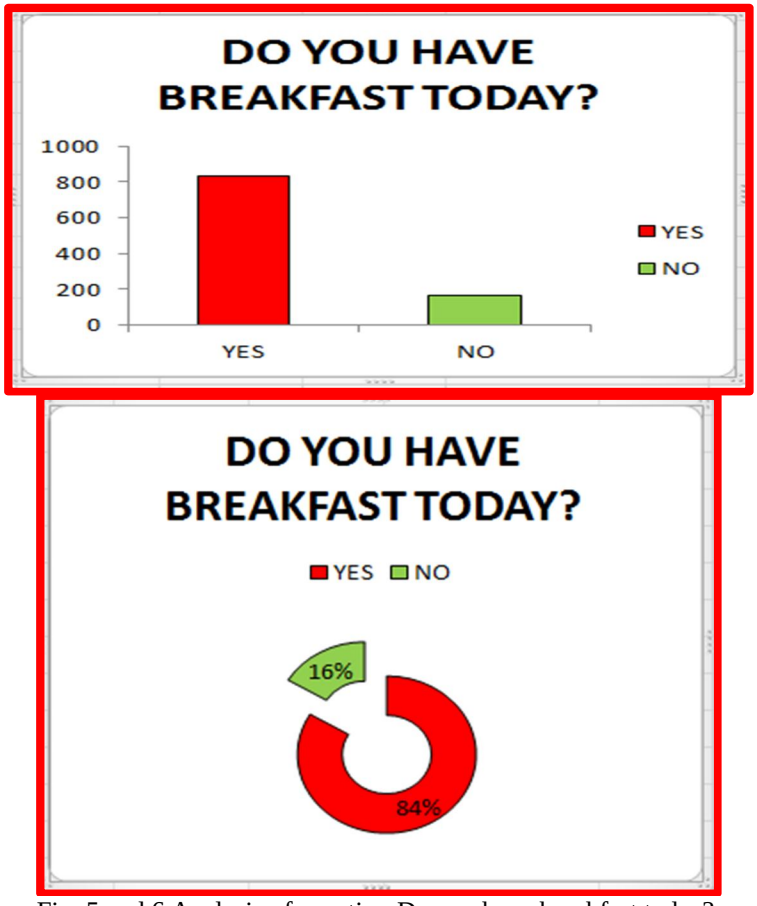

Fig. 5 and 6 Analysis of question Do you have breakfast today?

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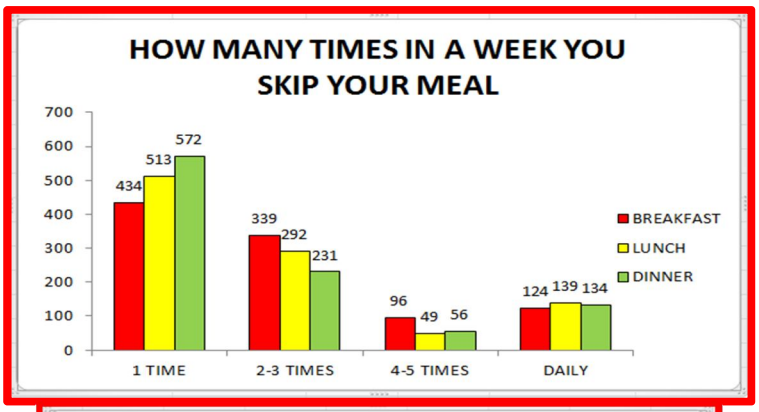


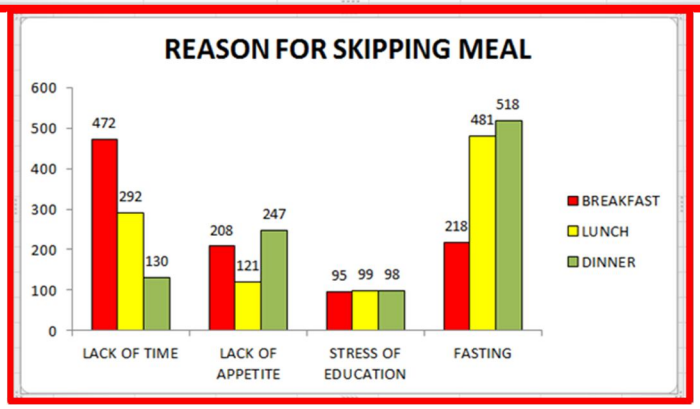
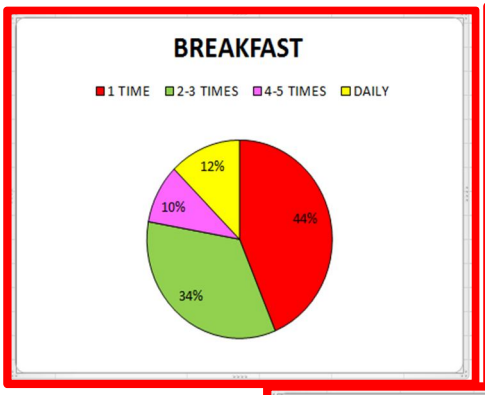
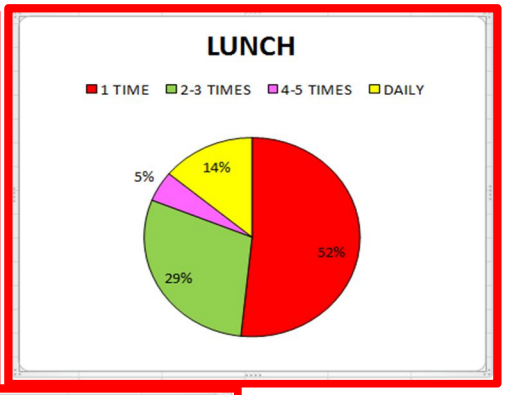


Fig. 7 Analysis of question How many times in a week you skip meal? Fig. 8 Analysis of question reason of skipping meal?





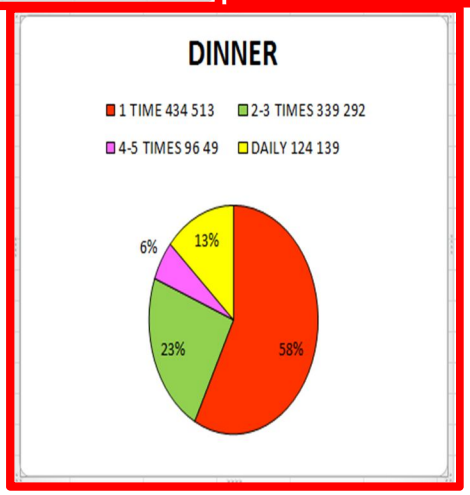


Fig. 9, 10 and 11 Analysis of question How many times in a week you skip meal?

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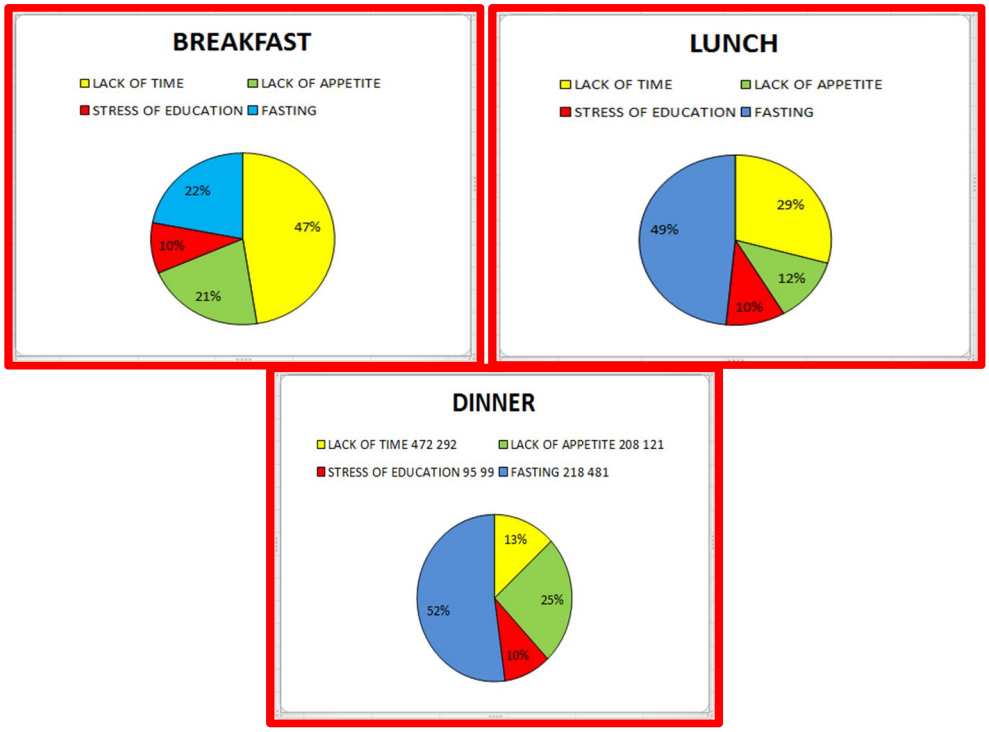

Fig. 12, 13 and 14 Analysis of question reason of skipping meal

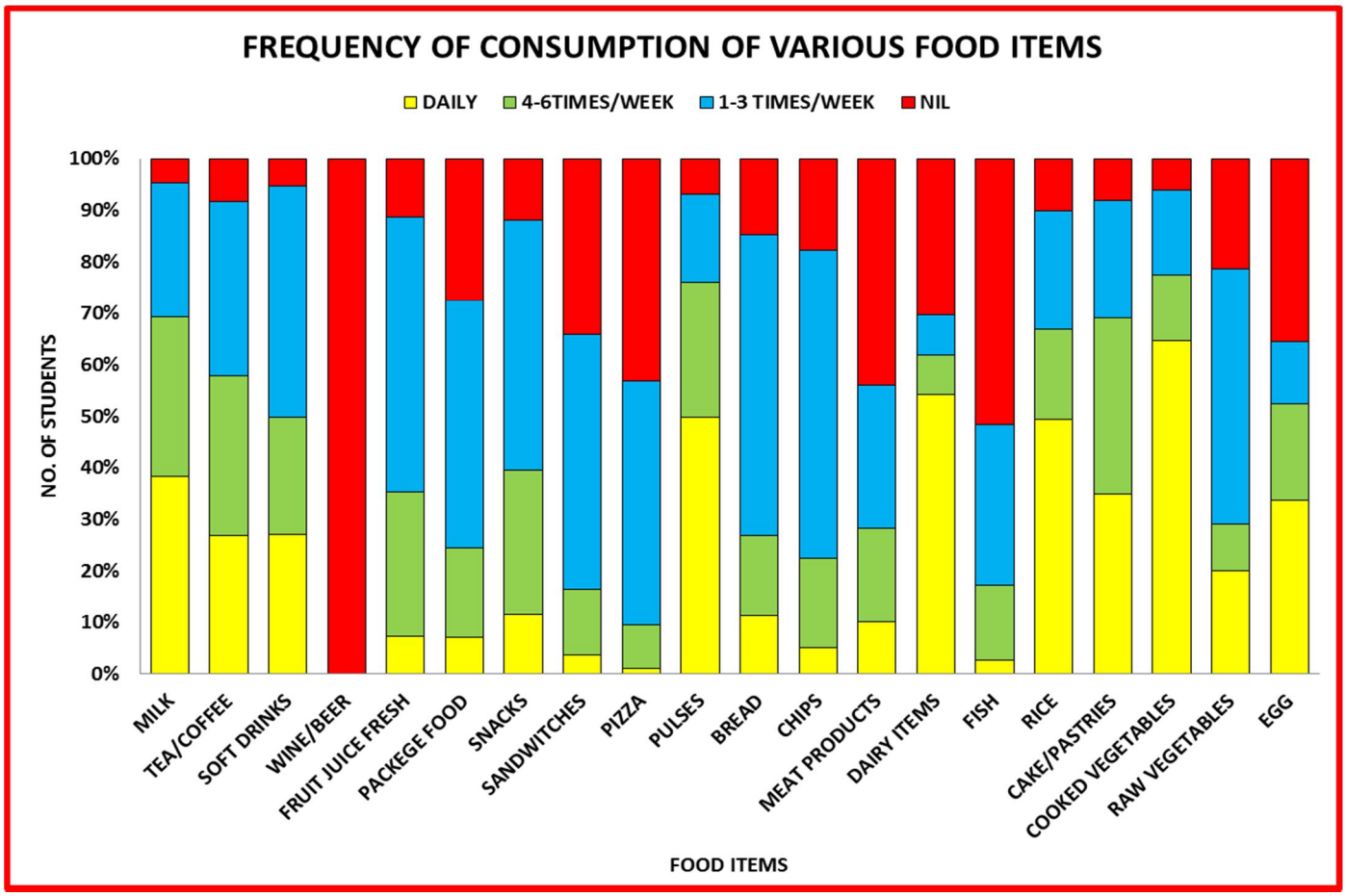

Fig. 15 and 16 Frequency of consumption of various foods by students

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V. ACKNOWLEDGEMENT

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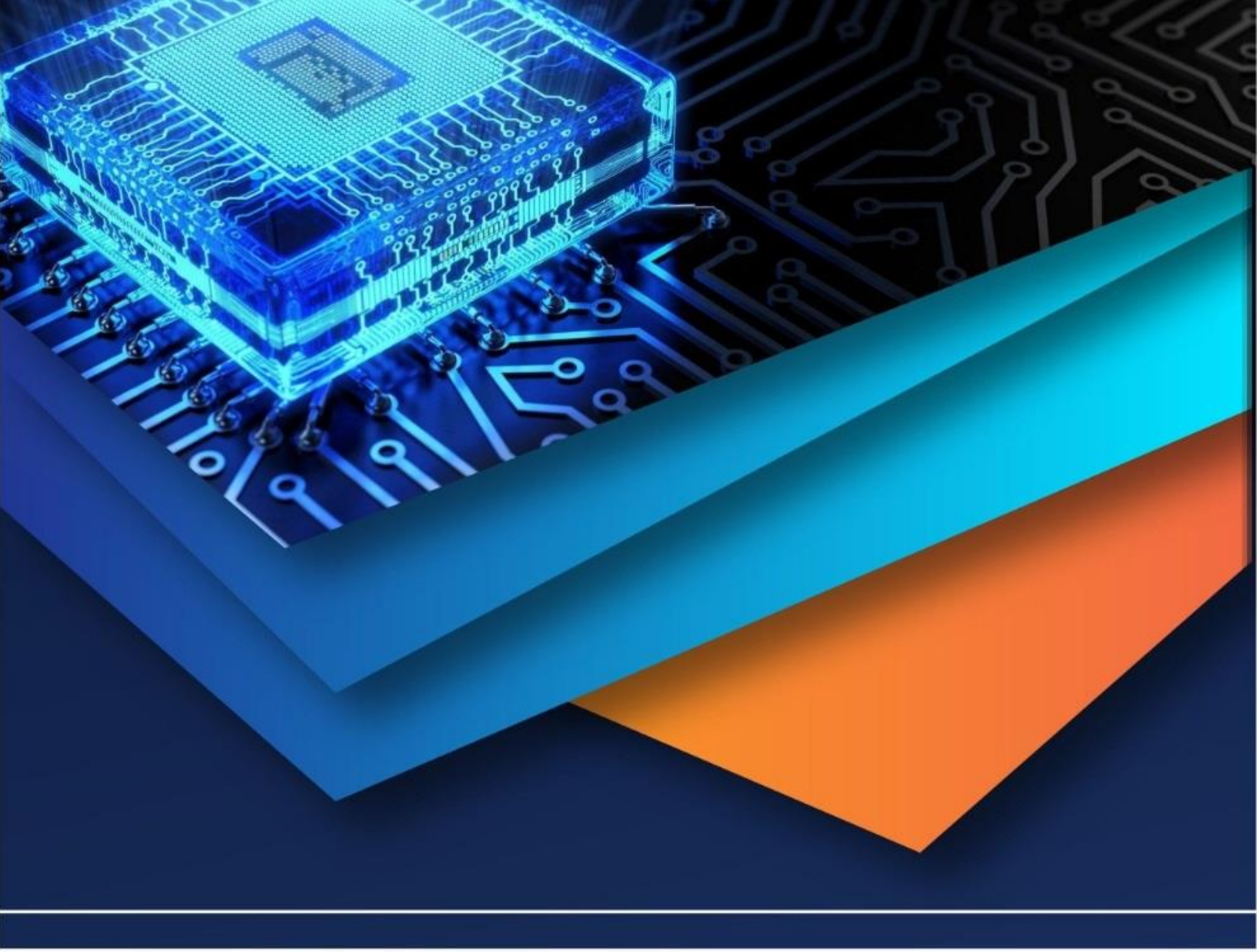

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