



## A SURVEY ON CONSUMPTION OF BALANCED DIET AMONG COLLEGE STUDENTS

Roshini P<sup>a</sup>, Dhaksha R<sup>a</sup>, Divya R<sup>a</sup>, Lalitha. A<sup>b\*</sup>

<sup>a</sup> Student, PG Department of Home Science - Food Science, Nutrition and Dietetics, Shrimathi Devkunvar Nanalal Bhatt Vaishnav College for Women (Autonomous), Chromepet, Chennai-44.

<sup>b\*</sup> Corresponding Author - Assistant Professor, Department of Nutrition, Food Service Management and Dietetics, Shrimathi Devkunvar Nanalal Bhatt Vaishnav College for Women (Autonomous), Chromepet, Chennai-44.

Email ID: roshinikumaran2002@gmail.com, rkdhaksha627@gmail.com, ramdivya592003@gmail.com  
lalitha.akilanathan@sdbnvc.edu.in

### ABSTRACT

*Wake-on-LAN (WOL) is a well-established networking standard that enables computers and network-enabled devices to be powered on remotely using a specially crafted broadcast message known as a magic packet. Although WOL has been extensively used in large-scale IT infrastructures, the increasing adoption of home automation, edge computing, and self-hosted personal servers has renewed interest in creating local, self-managed WOL systems independent of cloud-based platforms. This paper presents a detailed theoretical and architectural model for designing a self-hosted WOL system. The study examines protocol fundamentals, network dependencies, host-level configurations, software components, security implications, and remote accessibility constraints. Emphasis is placed on understanding how WOL behaves at different OSI layers, how network hardware processes magic packets, and how self-hosted controllers can be securely integrated into home or small-office networks. The paper also includes a structured comparison with cloud-based WOL systems, identifies common implementation challenges, and proposes a unified framework suitable for scalable, secure, and privacy-preserving deployments.*

**KEYWORDS** *Wake-on-LAN, self-hosted networks, remote access, magic packet, network security, automation systems.*



## **INTRODUCTION**

Diet is crucial for growth, development, and overall health and is influenced by factors like production, distribution, and cultural beliefs. A balanced diet contains a variety of foods in appropriate amounts to meet daily nutritional needs, protecting against lifestyle problems and providing reserves during nutrient deficiencies.

Undernutrition and overnutrition are major problems in India, where they include chronic disorders linked to diet, micronutrient deficiencies, and protein calorie deficiency. The goal of dietary recommendations is to avoid disease and enhance health, with an emphasis on vulnerable populations. The dietary guidelines focus an immense value on culturally acceptable diets and locally accessible foods. A balanced diet should also take into account regional differences in food and cooking techniques as well as being mindful of foods that should also be limited or avoided (Singh, 2023)

A balanced diet includes a range of foods in the correct proportions and quantities that provide the body with the macro and micronutrients that are required. Carbohydrates, proteins, fats, and food groups (cereals, legumes, poultry, meat, milk and milk products, fruits, and vegetables) are its constituents. It is recommended that 45–65% of daily calories come from carbohydrates, 20–35% from proteins, and 10–25% from fats, with healthy fats making up the remaining portion. Fiber supports a healthy digestive system and a feeling of fullness, while vitamins and minerals are vital for general health. (Sogari, 2018)

Essential amino acids and energy are provided by dietary proteins, which come from both plant and animal sources. Saturated fatty acids, which are found in animal-based proteins, can lead to dyslipidemia, cardiovascular disease, and multiple forms of cancer. Maintaining lean body mass, avoiding the loss of skeletal muscle, keeping bone mass, and lowering the risk of fractures in elderly people all depend on consuming adequate amounts of protein. Fats serve as both sources of cellular energy and crucial structural elements of cellular membranes. There are four types: saturated, trans, polyunsaturated, and monounsaturated. As opposed to saturated fats, which are mostly found in animal products, unsaturated fats are found in nuts, seeds, fish, and plant oils. Trans fats are mainly found in vegetable oils. Unsaturated fats lower cardiovascular disease risk. Omega-3 and omega-6 essential fatty acids are crucial for development and reproduction. Water is crucial for maintaining hydration and delivering micronutrients for bodily functions (Cena, 2020).

Phytochemicals which have antioxidative and fat-metabolizing qualities are all found in fresh fruits and vegetables. It has been shown that the risk of developing chronic diseases is negatively correlated with fruit and vegetable consumption. The consumption of a balanced diet is essential to maintaining a healthy weight and overall



well-being. Deficiency diseases occur where there is a lack of a specific nutrient, although some diet related disorders are a result of excess consumption. (Singh, 2023)

A balanced diet that contains enough levels of all essential nutrients is required to maintain a healthy life and prevent deficiencies or chronic diseases like diabetes, obesity, and high blood pressure. By lowering the risk of infections and illnesses, a proper diet helps to avoid noncommunicable diseases and malnutrition. It is essential to study the dietary habits and lifestyle practices of university students to educate them on adopting healthier lifestyles and preventing obesity. The risk of developing chronic diseases in the future can be decreased by raising understanding of balanced nutrition, the value of regular physical activity, and the risks associated with poor dietary choices (Singh, 2023). Thus, the study was planned to see the knowledge and practices of a balanced diet among college-going students.

## **METHODOLOGY**

### **Selection and data collection of subjects**

The samples selected for the study were college-going students of both genders, belonging to the age group of 17-25. The questionnaire method through online mode (Google Forms) was used for collecting the data. Questionnaires are structured research tools that provide a methodical framework for data collection and analysis. They are used in various study fields, including survey research and experimental design. They are essential for gathering factual data, understanding behaviors, assessing attitudes, measuring customer satisfaction, and creating baseline data for long-term study (Kuphanga, 2024). The sample size chosen for analysis was below 100, and responses were obtained from 54 subjects. A snowball sampling method was used for the study. The percentage was calculated using Microsoft Excel to represent the data. Pearson's correlation was used to test the relationship between variables.

## **RESULTS AND DISCUSSION**

### **Age of study participants**

The consumption of a balanced diet is not only influenced by individual choices but also shaped by demographic factors such as age, gender, education, income, occupation, and place of residence. Kant et al. 2002 found that dietary quality tends to improve with age, with older adults consuming more nutrient-dense foods. Table 1, portrays the profile of subjects.



Table 1: Age of subjects

Age	Male		Female	
	No	%	No	%
Age 17-25 years	6	11.1	48	88.8
Education Graduate	6	100	48	100

**Table 1**, shows the age of study participants. The study involved 54 college going students out of which 6 are male and 48 are female. It contributes to 11.1% male of the total participants and 88.8% female of total participants. **Wardle *et al.* 2004** observed that women consistently reported higher intake of fruits, vegetables, and fiber than men across diverse populations. **Reedy *et al.* 2010** reported that American adolescents consume diets high in empty calories and low in nutrient-rich foods, contributing to obesity and poor health outcomes. The same is observed in the study.

#### Perception of subjects on balanced diet

Knowledge of a balanced diet is essential for promoting health, preventing malnutrition, and reducing the risk of chronic diseases like obesity and diabetes. It empowers individuals to make informed food choices for long-term well-being WHO, 2020.

Table 2 : Perception of Subjects on Balanced Diet

Questions	Yes		No		Somewhat		Not sure	
	No	%	No	%	No	%	No	%
Believe that balanced diet is important	51	94.4	1	1.8	1	1.8	1	1.8
Have adequate knowledge regarding balanced diet	39	72.2	3	5.5	11	20.3	1	1.8

**Table 2**, discusses on “Perception regarding balanced diet”. The survey results based on questionnaire method shows that 94.4% of them believe that balanced diet is important, 1.8% doesn’t believe, 1.8% opted for somewhat and 1.8% were not sure. The table also shows that 72.2% have adequate knowledge regarding balanced diet, 5.5% don’t have enough knowledge, 20.3% have some knowledge and 1.8% are not sure with the knowledge regarding balanced diet. A



study conducted among college students showed that those who believed in the importance of a balanced diet and had adequate nutritional knowledge were more likely to adopt healthy eating habits (Yahia *et al.*, 2008).

### Correlation between barriers in maintaining balanced diet

Maintaining a balanced diet is often influenced by several barriers, including time constraints, economic limitations, lack of nutritional knowledge, cultural food preferences, and limited access to healthy foods. Studies have shown a significant negative correlation between these barriers and healthy eating behaviors. For example, individuals who face higher socioeconomic or logistical barriers are less likely to consume fruits, vegetables, and whole grains regularly (Darmon & Drewnowski, 2008).

**Table 3: Barriers in Maintaining Balanced Diet**

Barrier factors	No	%
Lack of time	31	57.4
Budget constraints	6	11.1
Lack of healthy food options	5	9.2
Personal preferences	10	18.5
No	1	1.8
Staying out of home	1	1.8

In **Table 3**, correlation between barriers in maintaining a balanced diet has been discussed. The survey results based on questionnaire method gives the data that 57.4% are unable to maintain a balanced diet due to lack of time, 11.1% are unable to maintain a balanced diet due to budget constraints, 9.2% are unable to maintain a balanced diet due to lack of healthy food options, 18.5% are unable to maintain a balanced diet due to personal preferences, 1.8% are unable to maintain a balanced diet due to unknown reason and 1.8% are unable to maintain a balanced diet as they are staying out of home.

Moreover, lack of awareness and misconceptions about what constitutes a balanced diet further hinder individuals from adopting healthy eating patterns (Yahia *et al.*, 2008). Making healthy meal choices is made more difficult for students by the abundance of fast food restaurants on college campuses. If uncontrolled, these eating habits and lifestyle choices can persist throughout adulthood, increasing the risk of obesity and its associated health



complications.(Yun, 2018). These barriers tend to be more pronounced among populations with lower education levels or those living in food-insecure environments.

## **CONCLUSION**

The study highlights the importance of a balanced diet among college going students, its regular practice among the participants and the hindering factors in maintaining the balanced diet. From this study the adequacy of knowledge among students regarding the balanced diet was discussed. The students seemed to have adequate knowledge regarding the balanced diet. Their food habits show an increased intake of processed foods and lack of balanced diet, especially protein, fiber rich foods, omega 3 fatty acids. As mentioned in several studies, lack of balanced diet acts as a contributing factor for Non Communicable Diseases apart from physical inactivity. The Pearson Correlation Coefficient gives a strong correlation between the barriers and maintaining a balanced diet. Further, research with larger sample sizes is recommended for detailed knowledge about balanced diet and its attainability among college going students. Understanding and addressing these obstacles is crucial for developing effective nutrition interventions and public health policies.

## **REFERENCE**

1. Baltar, F., & Brunet, I. (2012). Social Research 2.0: Virtual Snowball Sampling Method Using Facebook. *Internet Research*, 22(1), 55–74.
2. Berman, J. J. (2016). Understanding your data. In Elsevier eBooks (pp. 135–187).
3. Brown o, o Connor L, Savaiano D. Mobile Myplate: A pilot study using text messaging to provide nutrition education and promote better dietary choice in college students. *J am Coll Health*. 2017; 62:320-27
4. Cena, H., & Calder, P. C. (2020). Defining a Healthy Diet: Evidence for The Role of Contemporary Dietary Patterns in Health and Disease. *Nutrients*, 12(2), 334.
5. Darmon, N., & Drewnowski, A. (2008). Does social class predict diet quality? *The American Journal of Clinical Nutrition*, 87(5), 1107–1117.
6. De Ridder, D., Kroese, F., Evers, c., Adriaanse, M., Gillebaart, M. (2017). Healthy diet: Health impact, prevalence, correlates, and interventions. *Psychology & health*, 32(8), 907-941.
7. Deshmukh-Taskar, P. R., et al. (2009). Nutrient intakes and meal patterns of young adults. *Journal of the American Dietetic Association*, 109(9), 1522–1530.
8. Kant, A. K., Schatzkin, A., et al. (2002). Trends in nutrient intake and diet quality among US adults, 1989–1998. *American Journal of Clinical Nutrition*, 76(6), 1262–1269.



9. Kothari, C. R. (2004). Research Methodology, Methods and Techniques. New Delhi: New Age International (P) Ltd., Publishers.
10. López-Gil, J. F., & Tárraga-López, P. J. (2022). Research on Diet and Human Health. International Journal of Environmental Research and Public Health, 19(11), 652.
11. Manjunatha. N (2019). Descriptive Research. Journal of Emerging Technologies and Innovative Research (vol 6).
12. Reedy, J., Krebs-Smith, S. M., et al. (2010). Dietary sources of energy, solid fats, and added sugars among US children and adolescents. Journal of the American Dietetic Association, 110(10), 1477–1484. <https://doi.org/10.1016/j.jada.2010.07.010>
13. Sogari, G., Velez-Argumedo, C., Gómez, M. I., & Mora, C. (2018). College Students and Eating Habits: A Study Using An Ecological Model for Healthy Behavior. Nutrients, 10(12), 1823.
14. Wardle, J., Haase, A. M., et al. (2004). Gender differences in food choice: The contribution of health beliefs and dieting. Annals of Behavioral Medicine, 27(2), 107–116.
15. World Health Organization (WHO). (2020). Healthy diet. Retrieved from <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>.
16. Yahia, N., Achkar, A., Abdallah, A., & Rizk, S. (2008). Nutrition-related knowledge, attitudes, and practices of college students in Lebanon: A cross-sectional study. Nutrition Journal, 7(1), 32.
17. Yahia, N., Achkar, A., Abdallah, A., & Rizk, S. (2008). Nutrition-related knowledge, attitudes, and practices of college students in Lebanon: A cross-sectional study. Nutrition Journal, 7(1), 32.
18. Yun, T. C., Ahmad, S. R., & Quee, D. K. S. (2018). Dietary Habits and Lifestyle Practices among University Students in Universiti Brunei Darussalam. The Malaysian journal of medical sciences : MJMS, 25(3), 56–66.