



## A COMPARATIVE STUDY BETWEEN DIFFERENT DIETS OF ADOLESCENT GIRLS (with special reference to the students of Mithila University)

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### ABSTRACT:

Currently, nearly 1 billion people are under-nourished or starving, despite the world producing enough food to feed twice its population of 6 billion. One third of the grain we grow is fed to farm animals. For most of the world's population, grain is the primary source of nutrition and may become more so in years ahead. But less than one half of the world's land area is suitable for agriculture. Nearly all the world's productive land, flat and with water, is already exploited. Currently ruminant live stock like cattle and sheep graze about half of the cultivable land area. About 38% of the world's grain production is now fed to livestock. All the above circumstances affect our production rate, here is not a matter of production and consumption but through this research paper I create awareness regarding different diets. A research was conducted in Darbhanga district especially in Mithila University to assess the impact of vegetarian, lacto-ovo-vegetarian and non-vegetarian diet on the health of college going adolescent girls. Overall on the basis of data of research show that among vegetarian, lacto-ovo-vegetarian and non-vegetarian diet, Vegetarian food is the best among three but its' value should be increased by supplementing milk & egg. Then it will become a complete nutritional pack, which will maintain our body pH (a critical health factor) and protect our body by many degenerative and infectious diseases. So by promoting vegetarianism with some modification, we can live healthy, live long and ultimately remove hunger from the society.

**KEYWORDS:** Vegetarian, Lacto-ovo-vegetarian, Non-vegetarian, BMI, Adolescents, Malnutrition, Obesity

### INTRODUCTION:

Technological advances of the last two centuries have brought sweeping changes in our life style, including our diet. The steel mills made it possible to refine grains, and the prosperity generated by the industrial revolution made non-vegetarian diet affordable for many. The diet having refined grains and meat being palatable was quickly adopted by the affluent all over the world. It seemed a balanced diet was simply a combination of adequate amounts of known nutrients carbohydrate and fat were considered the elastic portion of the diet, the proportion of which could be varied with in a wide range with impunity. All the micronutrients were thought to have been discovered because just a combination of the known nutrients in right proportion administered parent rally could keep patients alive for years without any sign of nutritional deficiency.

A healthy diet is one that helps maintain or improve general health, provides the body with essential nutrition fluid, adequate essential amino acids, protein, essential fatty acids, vitamins, minerals, and adequate calories. It fulfils energy needs and provides all nutrients without exposure to toxicity. A healthy vegetarian diet contains plenty of fruits and vegetables and starchy foods some non

dairy sources of protein such as eggs and beans, some dairy products and a just small amount of fatty and sugary foods.

While the benefits or the advantages of vegetarian diet are many, the biggest disadvantage of vegetarian diet is that it fails to give a balance diet. A plant based diet cannot provide amino acids as found in non-vegetarian diet, each of eight essential amino acids is not found in vegetarian diet. Lacto-ovo-vegetarian diets contain all types of plant foods milk, dairy products as well as eggs. Egg white is a good source of easily digestible protein.

Non-vegetarian foods are rich in protein of a high biological value and in vitamin B complex, especially B12 which is not available in plant foods. Fish are rich source of calcium also. Poorly planned vegetarian diet can lead to deficiencies in protein, calcium, vitamin B12 and zinc which are seldom seen in meat eaters. Well planned vegetarian diet are appropriate for individuals during all stages of the life cycle because it contains more or less all the nutrients but more essential fatty acids, unsaturated fatty acids and more crude as well as insoluble fibres. So by including more & more vegetarian diets in daily routine one can save his/her life by different chronic diseases like obesity, high blood pressure, hypertension, ischemic heart disease, type 2 diabetes, kidney diseases and certain cancers. Vegetarians have lower mortality rates than the general non-vegetarian population.

## OBJECTIVES

Keeping all the above point in mind this research was planned to study & assess impact of vegetarian and other diets on the health of college going adolescent girls. The specific objectives of this research were:

- To study comparatively of Vegetarian, Lacto-ovo-vegetarian and Non-vegetarian diet upon the health of college going adolescent girls.
- To assess the impact of Vegetarian, Lacto-ovo-vegetarian and Non-vegetarian diet on the health of college going adolescent girls.

## METHODOLOGY

A study was conducted in Darbhanga district specially in Mithila University to assess the impact of vegetarian, lacto-ovo-vegetarian and non-vegetarian diet on the health of college going adolescent girls, with the following parameters like,

1. **Body Mass Index (BMI)**
2. **Blood Pressure**
3. **Blood Glucose Level**

Total 300 girls/respondents between the age group of 13-18 were taken as the subject of experiment. These 300 girls were divided into 3 groups having 100 girls each. These groups included:-

- A. **Vegetarian (100 girls)**
- B. **Lacto-ovo-vegetarian (100 girls)**
- C. **Non-vegetarian (100 girls)**

For fulfilling the entire objectives dietary schedule were prepared on the basis of respondent's opinion. At the end of each week all the above parameters were evaluated as well as tested. With the help of weighing machine their weight were observed and by the help of measuring tape their height were measured. Then after BMI was calculated. BMI was defined as weight (in kilograms) / height<sup>2</sup> (in meters) and international cut-off for BMI were used for classification of subjects as malnourished (BMI below 18.0 Kg/m<sup>2</sup>), normal (18 > BMI < 25 kg/m<sup>2</sup>), over weight (25 > BMI < 30 kg/m<sup>2</sup>) and obese (BMI > 30 kg/m<sup>2</sup>) (WHO 1994).

Their Blood Pressure was observed with the help of digital Blood Pressure measuring machine. Their Blood Sugar was seen with the help of digital Accu- Check Glucometer. Data were collected and the experiment was repeated.

## RESULTS & DISCUSSION

All the respondents dietary schedule were collected which is more or less similar in some manners so a common or general type schedule is as follows:-

**Table 1: A day dietary schedule for different respondents.**

TIMING	VEGETARIAN	LACTO-OVO-VEGETARIAN	NON-VEGETARIAN
7:30-8:30AM	Chapatti(1-2),Vegetables (seasonal), seasonal fruits or corn flakes, tea.	Chapatti (1-2), Vegetables (seasonal), eggs (2-3 times in a week), fruits, tea.	Chapatti (1-2), Vegetables (seasonal), eggs (2-3 times in a week), fruits, Tea.
12:45PM	Chapatti(2-3),Vegetables (seasonal), noodles (sometimes), dry fruits	Chapatti(2-3),Vegetables (seasonal), noodles (sometimes), dry fruits	Chapatti(2-3),Vegetables (seasonal), noodles (sometimes), dry fruits
4:00-4:30PM	Rice, pulses, vegetables(seasonal),salads, Any seasonal fruits(some time juices)	Rice, pulses, vegetables (seasonal), salads, curd (sometimes).	Rice, pulses, vegetables (seasonal), chicken/mutton/fish (2-3times in a week).
6:00-6:30PM	Snacks, seasonal fruits, noodles (sometimes), tea.	Snacks, egg roll (sometimes), noodles (sometimes), tea.	Snacks, egg roll (sometimes), noodles (sometimes), tea.
9:30-10:30PM	Chapatti (3-4), Vegetables (seasonal), salad, sweets (sometimes).	Chapatti(3-4),Vegetables (seasonal),egg(2-3 times in a week), salad, sweets(sometimes), milk	Chapatti(3-4),Vegetables (seasonal),egg, chicken, mutton (2-3 times in a week), salad, sweets(sometimes), milk,

**Table 1 reveals all three types of diet which were very common among them.**

- Vegetarian foods have several advantages like they are easily chewable, easily digestible. They have all the nutrients.
- Non-vegetarian food are rich in protein of high biological value and in vitamin B complex especially vitamin B12.
- Non-vegetarian foods are rich in saturated fat, cholesterol and animal protein and lower in fibre and folate.

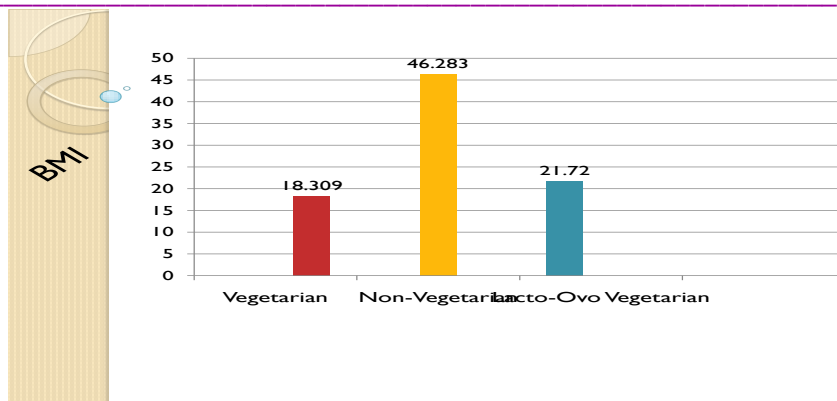


Fig 1

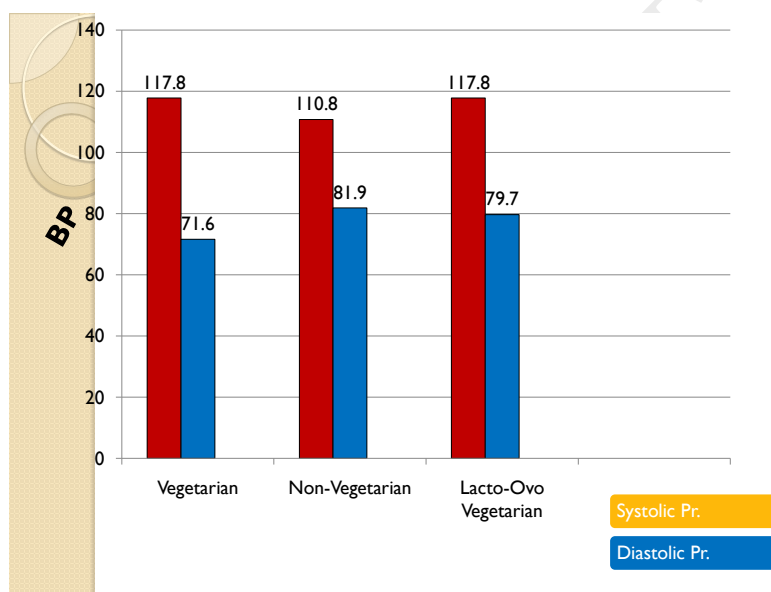
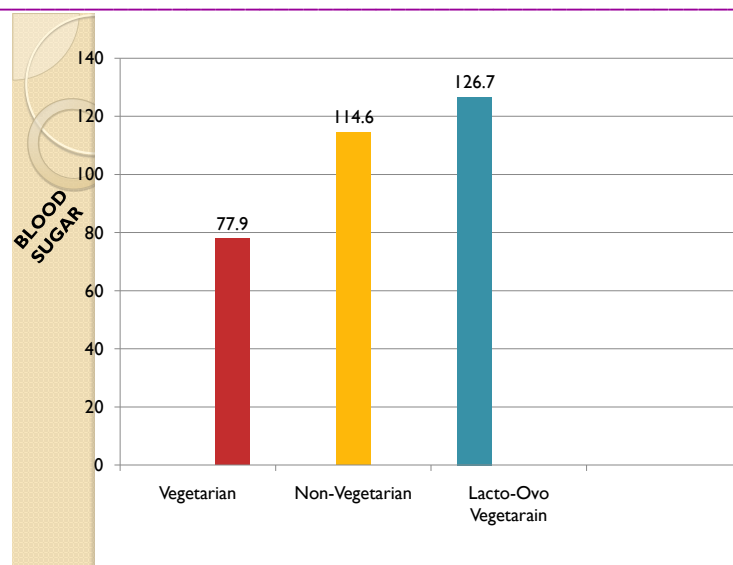


Fig 2

**Fig.1 shows that** BMI ratio of lacto-vegetarian was lesser than non-vegetarian ones as non-vegetarian food are higher in saturated fats, cholesterol and animal protein and lower in fibre and folate. Thus non-vegetarian has higher risk of obesity and heart diseases. Whereas in vegetarian BMI was lowest.

**Fig 2 discuss that** diastolic blood pressure was highest in non-vegetarian in comparison to lacto-ovo-vegetarian and lacto-vegetarian, whereas diastolic pressure was lowest in vegetarian than both of two.

On the basis of above two Fig 1 & 2 ,If vegetarian diet will be supplemented with animal product like milk and egg, in other word ovo-lacto- vegetarian diet is superb and excellent diet, which fulfill whole requirements of human body.



**Fig 3**

Fig 3 shows that the blood sugar was more in lacto-ovo-vegetarian than non-vegetarian and vegetarians' respondents. Like above two Figs. Blood sugar was observed lowest in vegetarians' respondents.

### CONCLUSION

The decision to be vegetarian or non-vegetarian depends on various factors such as cultural or dietary habits of the family, personal preferences, taste and avoidance of certain foods for health reason. There are several advantages of vegetarian food, but on the other hand non-vegetarian food produces more energy and they can sustain with more physical work and exercise in comparison to lacto-vegetarian or ovo-lacto-vegetarian food. On the other hand it can cause plenty of chronic diseases like obesity, high blood pressure, hypertension, ischemic heart disease, type 2 diabetes, kidney diseases and certain cancers in the human beings. So it is advisable to take the non-vegetarian diet in limited manner. Side by side balanced vegetarian diets fulfil all the nutritional requirement of the body.

Overall on the basis of data of research show that among vegetarian, lacto-ovo-vegetarian and non-vegetarian diet, Vegetarian food is the best among three but its' value should be increased by supplementing milk & egg. Then it will become a complete nutritional pack, which will maintain our body pH (a critical health factor) and protect our body by many degenerative and infectious diseases. So by promoting vegetarianism with some modification, we can live healthy, live long and ultimately remove hunger from the society.

### REFERENCES

1. American Heart Association; Heart Facts; 1983. Dallas, Texas, 1983.
2. Department of Agriculture: National Food Security Mission. 5. Available from: [www.agricoop.nic.in/NFSM/NFSM.pdf](http://www.agricoop.nic.in/NFSM/NFSM.pdf), accessed on March 13, 2012.
3. Department of Agriculture National Horticulture mission.7. Available from: <http://www.horticulture.kar.nic.in%2FNHM.htm>, accessed on March 13, 2012.
4. FAO World food summit 1996 Final report Part 1. Available 4. from: [www.fao.org/docrep/003/w3548e/w3548e00.htm](http://www.fao.org/docrep/003/w3548e/w3548e00.htm), accessed on March 13, 2012.
5. FAO's3. Information Systems for Food and Nutrition Security. Available from: <http://www.unescap.org/stat/meet/HLCM/-FAO.pdf>, accessed on August 22, 2013.
6. VR Young and PL Pellett (1994). "Plant proteins in relation to human protein and amino acid nutrition". *Am. J. Clinical Nutrition* **59** (5 Suppl): 1203S-1212S. PMID 8172124.
7. WHO 1994. A Report on health status of Adolescent girls.