

A Study on Cost Effective and Economical Healthy Foods

Syeda Amtul Lateef^{1*} and Tanveer Fatima²

¹Student of M.Sc Nutrition and Dietetics, ²Assistant Professor,
Department of Nutrition and Dietetics, Anwar Ul Uloom, PG College,
Affiliated to Osmania University, Hyderabad, India

*Corresponding Author E-mail: sqaiyum5@gmail.com

Received: 20.03.2018 | Revised: 15.04.2018 | Accepted: 23.04.2018

ABSTRACT

Energy dense diets offer a low-cost dietary option to the consumer. However, they are more likely to be nutrient poor & resulted in bringing about massive changes in the dietary habits of adolescents and young adults which are making them prone to many health hazards. One of the major predisposing factor is that, unhealthy food participants in the lowest quartile of energy cost had the highest energy intakes, the most energy-dense diets and the lowest daily intakes of key vitamins and micro nutrients participants in the highest quartile of energy cost had lower energy intakes and diets that ever higher in nutrients and lower in energy density. The present study was conducted to investigate healthy nutrition options for families living at or slightly above the poverty level. A market survey was also conducted to study the availability of different types of food in the markets which provided information regarding the consumers preferred and create awareness about the peculiar impact it may have on their health and also recommending them with healthy alternatives. From the data collected it was observed that 60% of subject enjoy balanced diet and 46% people did not know that a balance diet include the food from all food groups so as to meet the daily vitamins and minerals needed. 66% of people don't eat fruit and vegetable a day and 66% of the people don't consume healthy food because of rising food inflation and 33% of the people are unaware of different foods and food groups.

Key words: Economical Healthy food, Low cost, Health hazards, Balanced diet, Dietary habits.

INTRODUCTION

The aim of this information is to help you to make healthy and inexpensive choices through menu planning. People needs three meals a day and some need snacks as well. Growing children, older people, pregnant mothers and sports people will have additional needs for between meal snacks. Let's look at the food groups and find ways to make healthy choices, but keep costs down.

Bread and Cereals – Most of us need six serving per day – to provide energy, fibre and B- Vitamins.

Vegetables and Fruits – Eat a rain bow – choose 5 + different colored servings per day. These provide vitamin C, Natural Sugars (Carbohydrates for energy) and antioxidants.

Milk and Milk products – Are a good source of protein and calcium – for healthy bones and teeth.

Cite this article: Lateef, S.A. and Fatima, T., A Study on Cost Effective and Economical Healthy Foods, *Int. J. Pure App. Biosci.* 6(2): 1042-1051 (2018). doi: <http://dx.doi.org/10.18782/2320-7051.6501>

Meat as meat alternatives are also a very good source of protein, nutrients such as iron and zinc and vitamins. Included in this food group is meat, fish and poultry, eggs, nuts and seeds and dried beans.

In our society today, much emphasis is being placed on nutrition and healthy living overall, healthy foods are considered to be more expensive in the minds of consumers. This is a common misconception that has not been supported in a convincing manner. Numerous studies and publications contain effective strategies on how to eat healthy within a budget.

In order for low-income families to be successful in obtaining adequate nutrition at a low cost, they must know how to plan, purchase and prepare meals. These individuals must look at their financial resources and develop budgets and meal plans. Eating and healthful diet can reduce mortality as well as the risks of heart disease and cancer. Low Income families, however, are less likely to eat healthful diets. People in low paying jobs, particularly those who have only casual employment, are underemployed or are on a government pension for retirement, sickness, or acting as a career, find a range of financial stressors confronting them. During the financial years 2007-2008 alone, overall food prices rose by 3.9%, while some basic food prices rose more sharply: cheese by 14.2%, milk by 12.1%, poultry by 11.0%, and bread by 6.8%. Food cost plays a significant role in mediating food choice among low socioeconomic status (SES) groups.

When it comes to eating, researchers, the media, and policy makers mainly focus on negative aspects of eating behavior, like restricting certain foods, counting calories, and dieting. However, research has shown that diets and restrained eating are often counterproductive and may even enhance the risk of long-term weight gain and eating disorders.

Non-communicable diseases (NCDs) are becoming the leading causes of deaths worldwide (WHO 2010b) with 36 million (63%) deaths in 2008 and an expected

increasing trend up to 55 million deaths by 2030. NCD deaths are mainly caused by cardiovascular diseases (48%), cancers (21%), and chronic respiratory diseases (12%) (WHO 2010b). About 80% of coronary heart diseases and cerebrovascular diseases are due to an unhealthy diet and other behavioral risk factors. The concept of malnutrition is not synonymous with under-nutrition, as the concept currently includes unhealthy eating habits. Although low fruit and vegetable intake is considered the most common and well known interpretation of an unhealthy diet, especially from the consumers' point of view, other bad food habits such as consumption of an excessive level of salt and high consumption of saturated fats and trans-fatty acids also play an important role.

AIMS & OBJECTIVES

1. The purpose of this study was to investigate healthy nutrition options for families living at or slightly above the poverty level.
2. To elicit information and to conduct survey.
3. To conduct a market survey for the availability of various low – budget – healthy foods.
4. To determine consumer consumption pattern
5. To begin to understand the barriers to successful budgeting.
6. To create awareness on healthier alternatives.

MATERIAL AND METHODS

RESEARCH DESIGN - The city of Hyderabad was selected as the place of study. Sampling was done in a random order. The sample size included 100-150 subjects. The subject was particularly adolescents and young adults, tools used to collect the data from the subject was questionnaire method. Market survey on economical healthy food was done to find out varieties of food available in market. Place of Study The present study was conducted at Anwar Ul Uloom College, Myntara Mall.

SAMPLE SIZE AND SELECTION OF SUBJECTS:

The sample consists of total 150 samples. The sample included the age groups of adolescent and young adults were selected as the sample to conduct the survey.

MARKET SURVEY

A market survey was conducted with a view to know the different kinds of economical food available in the market, D-Mart, Big Bazar, More, Super Market, and others local stores located in Tolichowki, Malakpet, Mallepally the cost effective economical healthy and nutrient content of those food noted and analyzed.

QUESTIONNAIRE

The information required for the study was collected using a questionnaire method. A

questionnaire was prepared to know consumption pattern and explore the knowledge. The question was regarding the type of food consume and also include the questions that assess usual dietary intake (24 Hours dietary Recall), including food groups. The objectives of the study were kept in mind while constructing the questionnaire. It consists of only closed ended questions with multiple choices.

DATA ANALYSIS

The data collected for the present study was analyzed initially by tabulating it and then representing the same graphically.

RESULTS AND DISCUSSIONS**MARKET SURVEY**

S.No.	PRODUCT NAME	NET WT	COST	SHELF LIFE	CERTIFIED BY	NUTRITIVE VALUE	INGREDIENTS	PACKAGING MATERIAL	FACTORY OUTLET
1.	Every day Sandwich Bread	800 gm	Rs. 50	Before 6 Months	FSSAI	Carbohydrates = 48gm Sugar = 4.5 gm Protein = 7.2 gm Saturated Fatty acid=0.9gm MUTA = 0.8gm PUFA = 0.1g Calcium = 70 mg Iron = 1.5 mg Energy = 241 k.cal	Wheat flour , sugar edible veg oil, Yeast, Salt, Close – II preservative (282) emulsifiers.(471, 481 (I) Acidity regulators (260) Antioxidants (300) Flour treat ment agent (510)	Plastic	D-Mart
2.	Britannia Vitamin enriched sandwich bread	800 gm	Rs. 50	Before 6 months	FSSAI	Carbohydrates = 48gm Sugar = 4.5 gm Protein = 7.2 gm Fat=2.2gm S.FA = 0.9 gm MUTA = 0.6gm PUFA = 0.1g Tran fatty Acid =0 gm Cholesterol = 011 g Calcium = 70 mg Iron = 1.5 mg Energy =241 K.cal Vitamin A = 50 mg Vitamin D = 0.6 mg Vitamin E = 1 mg Vitamin B1=0.08mg Vitamin B2= 0.04mg	Wheat flours, sugar edible veg oil,(1.7%) Yeast, Salt, soya floor, Close –II preservative (282) milk solids emulsifiers (471, 481, (i) 476 Tri proven (1100) Acid regulator (260) floor treatment agent (510) vitamins and oxidants (300)	Plastic Cover	D-Mart

						VitaminB3=1.0 mg Vitamin B6=0.075mg Folic Acid=15mg Panthathenate =0.75mg Vitorin Ba=0.45m			
3.	Britannia Fruit Bread	800g	Rs.20/	Before 6 Months	FSSAI	Carbohydrates = 50gm Sugar = 18.5 gm Protein = 6 gm Fat=2gm S.F.A = 1 gm MUTA = 0.79gm PUFA = 0.2g Energy -278k.cal	Refined Wheat flour(53%) fruit products (11%) sugar Yeast, edible veg oil (palm) edible 10mm on Salt, Close -II preservative (282)Acidity regulators (260) emulsifier blend (471) (481) floor treatment agent (510) antioxidant (300)	Plastic	Big Bazar
4.	India Gate Basmati Rice Classic	1 Kg	Rs. 216/-	Before 24 months	FSSAI	Energy =344 kcal Protein =6.7gm Carbohydrates =77gm Fat = 0.5mg Dietary fibre = 1.4 gm Potassium =105mg Magnesium =65mg Protein =12g Fat = 5g S.F.=2.029g Transfat0.03g	Black gram flour, ragi flour oats, flour maize flour refined wheat flour) bakery shortening edible common salt raising agent(e-500II) Acidity regulator (E-330) spices	Plastic	Big Bazar
5.	Desi Atta Thalipeet Mix	500g m	Rs. 120/-	Before 12 months	FSSAI	Energy =377k.cal Carbohydrates=64gm Protein =19gm Fat = 5g S.F = 0g	Cereals pulses flour (81%) (Split Bengal gram, jowar rice split black gram, green gram Bengal gram wheat mixed spices and condiments	Plastic	Big Bazar
6.	Desi Atta Multi grain Dosa mix	500g m	Rs.90/	Before 12 months	FSSAI	Energy =377k.cal Carbohydrates=7 gm	All grain flour (81%) (Rice flour)	Plastic Bag	Big Bazar
7.	Desi Atta Moong Pakoda mix	200g m	Rs 60/	Before 12 months	FSSAI	Energy =377k.cal Carbohydrates=58gm Sugar =0.5 Protein =21g Fat = 2g Saturated = 0.5g Trans fat = 0.01g	Mongdal (87%) edible common salt mixed spices. Raising agents(E-500) (11) Acidity regulator (E330) compounded ring	Plastic Bag	Big Bazar
8.	Desi Atta besan Pakoda mix	200g m	Rs50/	Before 12 months	FSSAI	Energy =374k.cal Carbohydrates=58gm Sugar =0.5 Protein =22g Fat = 6g	Chickpea flour (87%) edible common salt mixed spices baking agent UNS-II) compound asafetida , acidity regulator (INS-330)	Plastic Bag	Big Bazar
9.	Desi Atta Rava Idli mix	200g m	Rs.39/	Before 12 months	FSSAI	Energy =346k.cal Carbohydrates=71gm Protein =11gm	Semolina (92%) edible common salt mixed spines cashew nuts baking agent (E500 (11)	Plastic Bag	Big Bazar

						Fat = 2g S.Fat = 0.5gm			
10.	Desi Atta Rice Idli	200g m	Rs.49/	Before 12 months	FSSAI	Energy =368k.cal Carbohydrates=7 2gm Sugar =0.5 Protein =11g Fat = 4g Salt fat = 2.14g Trans fat = 0.01g	Rice flour (65%) split black gram flour (26%) bakery shortening acidity regular (E-330) Raising agent(E- 500) ii edible common salt	Plastic Bag	Big Bazar

Table 1: IMPORTANT OF EATING HEALTHY

Option	Response in %
Very Important	90
Somewhat Important	10
Not important	0
least important	0

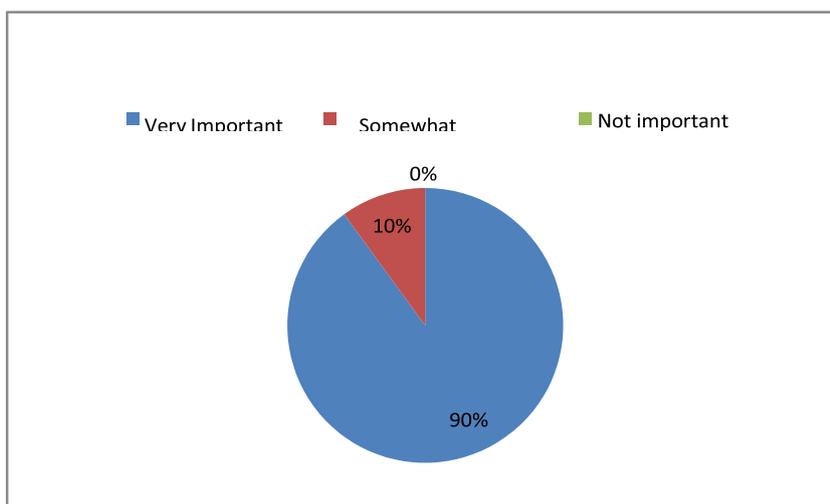


Fig. 1:

Interpretation:

90 % of the people give the importance to healthy diet. 10% of the people gives not that much importance to their food

Table 2: MEASURES IN ORDER TO STAY HEALTHY

Option	Response in %
Eating Healthy on time	34
Regular activity	6
Avoiding junk	6
All of the above	53

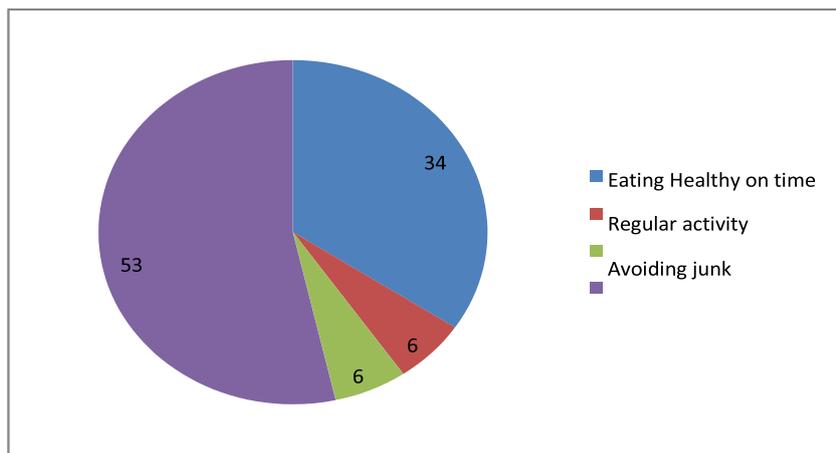


Fig. 2:

Interpretation

53% of the people consider all of the above options in order stay healthy, 34 % of the people eat on time

Table 3: FOODS THAT ARE IMPORTANT FOR A HEALTHY DIET

Option	Response in %
CEREALS AND PULSES	40
FRUITES AND GLV'S	13
MILK PRODUCTS	13
ALL OF THE ABOVE	33

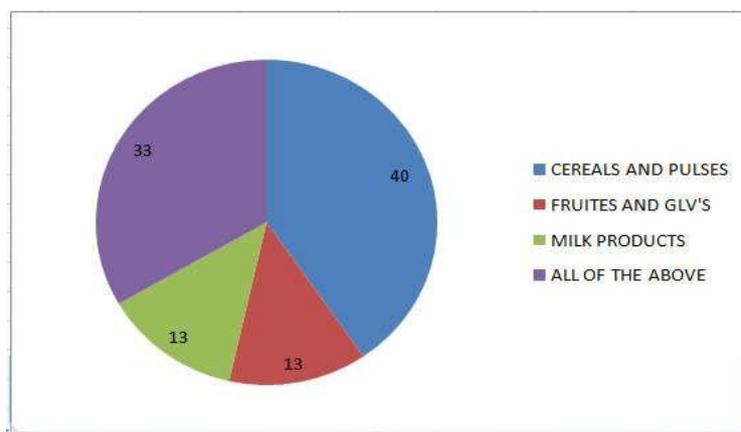


Fig. 3:

Interpretation

Cereals and Pulses will be the healthy diet in 40% People opinion 13% Of the people will think Milk, Fruits and GLVs are good for healthy diet. (figure 3)

Table 4: AWARENESS OF ORGANIC FOOD

Option	Response in %
yes I am aware and I have them	34
No I am not aware of them	66

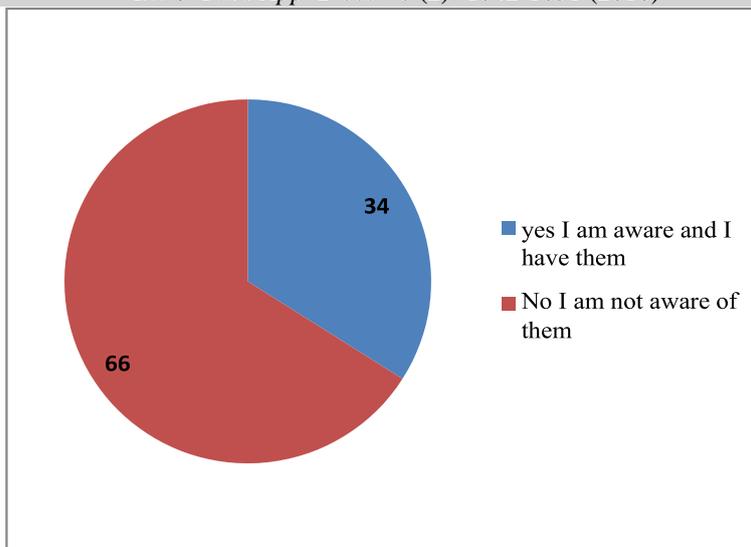


Fig. 4:

Interpretation

66% People are aware of organic food 34% are not aware of organic food

Table 5: POINTS YOU KEEP IN MIND WHILE PURCHASING GROCERY BECAUSE OF THE RISING FOOD INFLAATION

Option	Response in %
Because of high price you will simply avoid that food	66
Dump buying junk and try for healthier options	34

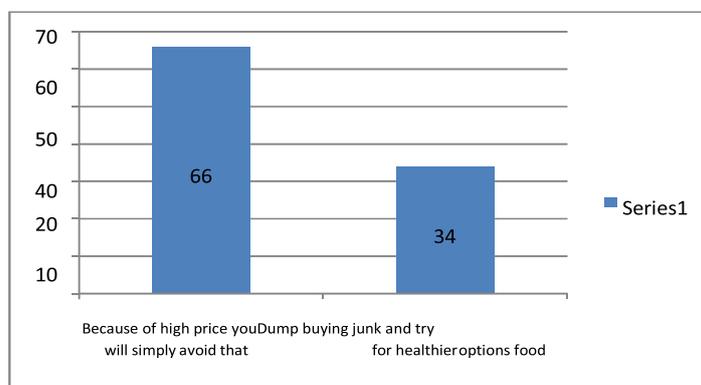


Fig. 5:

Interpretation

66% of people avoid healthy food because of high rates, 34% of people avoid buying junk food and try for healthier options

Table 6: FOODS THAT ARE REASONABLE OR INEXPENSIVE YET HEALTHY AND MAKE UP FOR ONES DAILY NUTRIENT REQUIREMENTS

Option	Response in %
CEREALS, PULSES, VEGETABLES & FRUITS	40
CEREALS, PULSES, MILK & MEAT PRODUCTS	34
CEREALS, VEGETABLES & FRUITS	13
ALL THE ABOVE	13

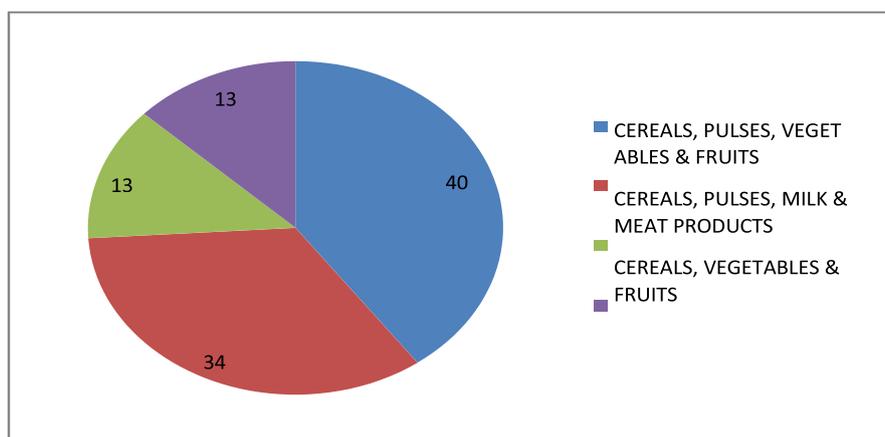


Fig. 6:

Interpretation

40% People think cereals, pulses, vegetables & fruits are good for one's daily nutrient requirement, 34% People think cereals, pulses, milk & meat products are good for one's daily nutrient requirement.

DISCUSSION

Market survey provides the information about a wide range of products that are available in the market. It was conducted to know the various brands and products of foods from a food group in the market. It was a highly informative survey which covered all the leading super markets of Hyderabad as well as the local grocery stores. During the survey, an oral interview was also conducted on the subjects regarding their choice of selection of foods. Nutritive value of almost 89- products were observed and noted, labeling information like brand mark, cost, net weight, certification, best before date ingredients were also observed and labeled. Majority of the foods were observed to be certified by FSSAI, FPO certification was also seen.

SUMMARY AND CONCLUSION

Healthy eating on a budget is always available when knowledge and resources is provided. There are some tools and knowledge needed in order to plan, purchase and prepare low cost, healthy meals. It is imperative that this information be spread to more under privileged families in order to curb the prevalence of inadequate nutrition among the low income sector. Implementing these practices will greatly increase the nutritional value of foods eaten by under privileged families.

Planning involves developing a budget and creating a menu plan within budget as meal plan that family can purchase food items. When purchasing groceries it is important to get a sense of food costs. It is important to consider a variety of food items in order to provide a balance of nutritious foods. One helpful hint in purchasing is to buy based on what items are in season. After collecting the data on cost of food, the people should determine items that will be purchased on a weekly basis as items that may last several weeks to months.

From the data collected it was observed that 60% of subject enjoy balanced diet and 46% people did not know that a balance diet include the food from all food groups so as to meet the daily vitamins and minerals needed. 66% of people don't eat fruit and vegetable a day and 66% of the people don't consume healthy food because of rising food inflation and 33% of the people are unaware of different foods and food groups.

In present study we focused their analysis on type of diet & frequency of eating pattern & the study has highlighted that there is need to improve the awareness of cost effective and economical health foods by educating them and explaining about the lifestyle modification like practicing healthy habits and changing dietary habits which is also essential.

By creating awareness and educating the consumer about the importance and health benefits of cost effective and economical healthy food we can infer that there will be increase in the knowledge of people regarding the value of including all food groups in the diet and an improvement in the nutritional health and dietary intake of the people can also be expected.

The data on cost effective and economical healthy food of the participants will be collected in this study. The participants will be asked to fill questionnaire containing questions about their eating habits, parent occupation, educational information and some general information to achieve substantive health benefits the diet should include all food groups.

Nutrition education at school and college level must be made compulsory to educate adolescent and young adults about healthy dietary habits and to create awareness about the quality and quantity of food that should be consumed. Over consumption of anything lead to health issue hence its is recommended that people should eliminate some of the beverages from their diet because they do not have any functional property instead degrading the health and putting the individual to many long term risks .

To conclude the survey helped us to learn about the nutrition labels of product, their nutritional advantages and many different affordable brands to help the consumer with a wide range of variety.

REFERENCES

1. Liuarie, K., Nassar, A., Mehta, K., an interactive Nutritional guide to develop low – cost healthy meals while sustaining indigenous foods: published in: *Global Humanitarian Technology Conference (GHTC)*, 2014 Date Added to IEEE explore: on December (2014).
2. Williams, L., Abbott, G., Anthony, L., Works Kylie Ball and David Crawford- *Improving perceptions of healthy food affordability: results from a pilot intervention* relieved: 27 March 2013
3. /Accepted: 13 February 2014 / Published (2014).
4. 10th March (2014).
5. drewnowski, A., Darmon, N., food choices and diet cost: An economic Analysis: *The Journal of nutrition*, **135**: 4th April 2005 (2005).
6. French, S. A., Pricing effects on food choices, *the Journal of Nutrition value B3*, **3**: 1st March 2003 (2003).
7. Rao, M., Afshin, A., Singh, G., Mozaf, D., Do healthier foods and diet patterns lost more than KSS healthy options, *Arian Medline* (200-2011) (2011).
8. Wards, P., verity, F., Tsourlos, P. L. G., Coveny, J. and Wong, K. C., Food the relationship between low income and the affordability of healthy food. *Paulr Wards, fionaverity, partricia larder George Tsourlos, John Coveny, and Kwan Chu Wong*, received 6th June 2012 revised 6th December 2012, accepted 13th December 2012 (2012).
9. Nelson, M., Karen, A., Peploe A modest – but –Ad equals food budget for household. Published (1990).
10. April (1990).
11. Alforsotesang, Margaret, W., Coveny, J., *A survey on food cost, availability and affordability* (2007).
12. Published: 7th November, (2007).
13. Mailltm, Darmoon, Drewnowksia., Lowest – cost healthful food plans culturally and socially acceptable. *Public health Nutrition*, 13th August2010 (**8**): 1178-85 (2010).
14. Healthy eating on a budget-Get tools.,(Healthy and inexpensive choices through menu planning.
15. Andrieu, E., Daemon, N., drewnowski, A., Low-cost diet : *more energy fewer nutrients* (2005).
16. Samoggia, A., offering Low-cost healthy food: *An exploration of food* (2014).
17. maillot, M., darmon, N., Are the lowest cost *healthy food plans culturally and socially acceptable* (2009).

17. Ward, P. R., Food stress in Adelaide: *The Relationship between low-income and Affordability of healthy food* (2013).
18. Luedtke, C. E., Healthy Eating for low-income family; SNAP. *Undergraduate research journal for human science*.
19. Alexander, M. F., Nobuko, R., Hongu University of Arizona; *journal of extension. The USDA'S Healthy Eating on a budget program: Making better eating decision on a budget* (2016).