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A Study on Fats and Oils Consumption Pattern Among Selected Households in Kerala

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***Abstract*: This paper represents the overview on the purchasing, usage, consumption pattern and knowledge about fats and oils among households in Kerala.**

***Keywords*: Atherosclerosis, Cardio vascular diseases, Cholesterol, Consumption, Fats and oils, Linolenic acid, Methyl group, Oleic acid, Omega-3 fats, Rapeseed oil, Saturated, Snacking pattern, Trans fats.**

1. Introduction

The Fats and oils are vital part of healthy diet. Structurally they're esters of glycerol with 3 fatty acids. They are scientifically known as triacylglycerol however ordinarily referred as triglycerides. The terms fats and oils are typically distinguished as triglycerides within the liquid state at specific temperatures (oils). From those within the solid state (fats).

They are mainly of vegetable origin (e.g. palm oil, rape oil, Glycine max bean oil, olive oil, cocoa butter, etc.) or animal origin (e.g. pork lard, tallow, fish oils) also as from animal milk fats. Fatty acids found in most typically consumed oils and fats, they are composed of long carbon and Hydrogen chains, containing from eight to twenty carbon atoms, largely with even numbers of carbon atoms, whereas animal fats additionally contain vital levels of odd-chain fatty acids. They need a methyl (CH3) group at one end and acid (COOH) at the opposite. This acid cluster reacts with the radical groups on the glycerin molecule to make the organic compound linkages of the triacylglycerol molecule.

Fats and oils also play an important role in the quality of processing as well as in the organoleptic structures and texture of food products. This growing knowledge of the structural and functional properties of fats and oils is allowed in the development of stable and efficient food products. Lipids are a major source of energy for an important precursor of immune systems and are important components of cell cells and other biological structures. Lipids also play an important role in absorbing fatty nutrients such as fat-soluble vitamins and other dietary and therapeutic ingredients. Omega-3 fats are one of the most widely used ingredients in health care. Products such as fish oil, shark cartilage, shark liver oil, and vitamins have been on the market since the beginning of the 20th century. The importance of essential oils in the daily diet is now well known and fresh fortified foods and dietary supplements omega-3 products are considered one of the fastest growing markets. Marine oil is a major source of omega-3 fatty acids and fish, soybean vegetable. Oils and flaxseed oil contain high amounts of short alpha linolenic acid. Fish oil provides a combination of eicosapentaenoic acid and docosahexanoic acid and fatty fish is a major food source for EPA and DHA. (Ernesto M Hernandez & Afaf Kamal-Eldin., 2013). Coconut oil is the most abundant natural oil. Other oils are 'saturated' with palm kernel oil (usually, 82% saturates), cocoa butter (usually, 60-64% saturates) and palm oil (usually 51%). The lump and beef are also often considered to be in this category of saturated fat although it usually contains 40% saturates and 37% respectively.

Olive oil and rapeseed oil are rich in monounsaturated - typically, 56-83% and 50-66% respectively. Soybean oil usually contains 53% linoleic acid and 8% linolenic acid. Sunflower oil contains 69% linoleic acid and <1% linolenic acid, but there are new varieties, with more oleic acid, containing less linoleic acid and more oleic acid. (IFST. 2017)

Edible fats constitute an important part of food consumption in Indian homes. The demand for edible fuel in India has shown steady growth over the period 2001 to 2020. Growth is driven by the development of individual consumption. However, the current rate of individual consumption in India is lower than in international statistics. The Indian edible oil market continues to be subdued and given good foundations for macron and population.

Consumption of edible oil is primarily a public practice in India. Traveling with traditional cuisine, mustard and rapeseed used in the northern and eastern provinces of the country, coconut, sunflower, and palm oil are widely consumed in southern India while peanut and cotton oil are popular in Gujarat. Rapeseed oil is very popular in north-eastern India. Soybean oil is very common in central India. (Aniket veer et al., 2001). In India, vegetable oil used in cooking represents 80% of the visible fats used, otherwise, fatty foods depend on income and one oil is often preferred for cooking, especially in rural areas. As a result of the dietary changes, there has been a shift from traditional oils such as corn oil to other oils such as palm oil and sunflower as well as increased consumption of ghee. However, replacing traditional vegetable oil with sunflower oil has not stopped the growing spread of atherosclerosis and diabetes in India. Recent findings suggest that the use of sunflower oil has adverse effects on the lipid profile. Trans fatty

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acids are present in one or more of the two combinations of trans to transplantation instead of the normal suspension of cis. They are sought after by the Vanaspati industry as they transfer the solids to margarine and plasticity as well as the firmness of the emulsion in the condensing. Studies have shown a direct link between Tran's fatty acids and heart disease, breast cancer, reduced gestational age, the risk of preeclampsia, disorders of the nervous system and vision in children, colon cancer, diabetes, obesity and allergies. As a result of these new findings the fatty foods should be zero and new oil hydrogenation technologies should be developed that produce zero trans fatty acid while simultaneously maintaining the desirable properties provided by trans fatty acid to hydrogenated fats. Currently in India there is no system for monitoring and controlling the amount of fat consumed in processed foods so strict fast food law is required. (Vandana Dhaka et al., 2011).

Fats and oils are essential part of our health, also they play an important role in our diet, but high consumption of fats and oils results adverse health effects. The LDL (Low density lipoprotein) and Trans fats may cause major health problems. Industrially produced trans fats are nutritionally unacceptable and should be avoided in our diet. Increased consumption of Tran's fatty acids results high risk of coronary heart disease and other health issues. Also the different fatty acid groups may result in high blood cholesterol levels particularly LDL cholesterol. Increasing in blood cholesterol levels increases the risk of cardio vascular diseases.

Studies shown that elevated LDL Cholesterol were the important contributors to the high rates of heart disease. High consumption of fats and oils results in high risk of Cardio vascular diseases, High cholesterol, High blood pressure, obesity etc. The current study focuses on the consumption pattern of fats and oils among selected population and consumer trends towards purchasing of fats and oils and their snacking patterns and also concentrating the health hazards of fats and oils.

2. Objectives

- To observe the current trends in purchase of fats and oils.
- Evaluate the consumption pattern of fats and oils.
- Assess the nutritional status and health risks associated with fats and oil consumption.

3. Results and Discussion

The result and discussion of the study entitled "A Study of Fats and Oil Consumption among Selected Households in Kerala" are given below,

1) Gender distribution of the selected sample (N=250)

Among the 250 samples 54 percent were male and 46 percent were female.

2) Age distribution of the selected sample (N=250)

Among the 250 selected sample 6percent belongs to the age group of 15-20 years. Among them 1percent were male and 5 percent were female.44 percent belong to the age group of 21-25 among them 19 percent were male and 25 percent were female.13 percent of the sample belongs to the age group of 26-30 years among them 8 percent were male and 5 percent were female.5 percent of the sample belongs to the age group of 31-35 among them 3 percent were male and 2 percent were female.7 percent belong to the age group of 36-40 among them 3 percent were male and 4 percent were female.6 percent belong to the age group of 41-45 among them 3 percent were male and 3 percent were female.11 percent belong to the age group of 46-50 among them 9 percent were male and 2 percent were female.6 percent belong to the age group of 51-55 among them 6 percent were male and there is no female in this age group.5 percent were belong to the age group of 56-60 among them 3 percent were male and 2 percent were female.

3) BMI of the selected sample (N=250)

Among 250 selected samples 10 percent were underweight among these 3 percent were male and 7 percent were female.58 percent have normal weight among these 27 percent were male and 31 percent were female.31 percent were overweight among these 23 percent are male and 8 percent were female. And 3percent were obese among these 2 percent were male and 1percent were female.

4) Type of oil used

Among these 250 samples majority (90 percent) were using coconut oil for different purposes.54 percent were using sunflower oil, 26 percent using palm oil,20 percent using olive oil 18 percent were using corn oil. Soybean oil, gingelly oil, rice bran oil is used by less number of peoples, that is 5 percent, 4percent and 3percent respectively.

5) Brand of oil used

Among 250 samples 26 percent were used suffola, 46 percent were used gold winner,19 percent were used pavizham,20 percent used pavithram,13 percent used KLF Coconad and 13 percent were used other brands of oils.

6) Reason for choosing the brand

Among the 250 samples 77 percent were choose oils based on quality,36 percent were choose for taste, 31 percentage were choose oils based on price and 16 percent select oil based on its packaging.

7) Source of information about edible oil

Among the 250 samples 65.5 percent were buy oils by the influence of advertisements. Other 34 percent were buy oils by friends or relative's suggestions, 19 percent were refer internet and other 10 percent were buy oils by the discounts offer by market.

8) Quantity of edible oil purchase per month

Among 250 selected samples, 48 percent were purchase less than 1 liter of oil per month, 22% were purchase 1 liter of oil per month and 30 percent will purchase more than 1 liter of oil.

9) Frequency of purchasing of oil.

Among 250 selected samples, 25 percent were purchase edible oil once in a week, 57 percent were purchase once in a month, and 18 percent were purchase once in 3 months.

10) Expenditure pattern for edible oil

Among 250 selected samples 4 percent were spend below Rs.100 for purchasing oils and 4 percent were spend above Rs.500 for purchasing, 44 percent were spend Rs.200-500 and 45 percent were spend Rs. 100-200 for purchasing.

11) Frequency of reusing the used oil

Among the 250 samples 41 percent use cooking oil at one time, 45 percent were use 2 times and 14 percent were use 2-3 times.

12) Frequency of eating snacks

Among the 250 selected samples 55 percent were daily eat snacks, 26 percent were eat 3-4 days per week, 13 percent were eats 2-3 days per week and 6 percent were eats once in a week.

13) Health issues

Among the 250 selected samples 48 percent were young adults. So they doesn't have any health issues, and the other 52 percent have some health issues.

14) Family History

Among the 250 samples 64 percent have positive family history and 38 percent have negative family history.

15) Fat Restriction

Among the 250 selected samples 28 percent restrict fat intake, 32 percent partially restrict fat intake and 40 percent were didn't restrict fat intake.

16) Knowledge about fats and oils

Among the 250 selected samples 52 percent have knowledge about fats and oils usage, and 48 percent doesn't have any knowledge about fats and oil usages.

4. Conclusion

From this study it can be concluded that, almost peoples are used coconut oil for cooking and the second priority goes to sunflower oil then palm oil these all are saturated fatty acids this may leads to major health issues. And the usage oils are also increased from this survey it is clear that their daily usage and monthly purchasing of fats and oils are increased rapidly during these days. Most of the peoples are purchase edible oils once in a week or month and the quantity will be more than two liters. In the case of monthly expenditure pattern majority were spend more than three hundred rupees, also few peoples were spend above five hundred rupees for edible oils. In snacking pattern people belongs to the age group of 20-30 have high snacking habits also in the case of fast foods majority prefers these types of foods and their consumption pattern is very high. More than 50 percent people are daily consume fast foods and other bakery products. Among these bakery products most of them prefers oily foods and other fatty foods this may also leads to major health problems. The snaking patterns are mostly seen in young adults and children. Majority of the people know that high consumption of fats and oils are not good for health, but they didn't control their fat and oil intake. It may leads to cardio vascular diseases, cholesterol, atherosclerosis, obesity so on. The consumption of oil intake was increased among the population. And the market trend of fats and oils where increases rapidly, so new varieties of oils and brands are established. The expenditure for purchasing fats and oils are also increased within these 2-3 years. In the case of snacking pattern majority of snacking habit seen in adults with age group of 20-30. Also the consumption of fat and oil are increased among adults. In the case of health status 52 percent have major health issues and remaining 48 percent are young adults. They have chances to develop health issues because their snacking pattern and oil consumption pattern are very high.

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