

# Knowledge about Palm Oil in The University Population: A Descriptive Study

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## Abstract

**Introduction:** Palm oil is the most used in the world. It is composed of mainly fatty acids, that should be maintained <10% of the total energy, within a balanced diet. College students are particularly vulnerable to poor nutrition, because they prefer high-fat fast food as first choice.

**Objective:** To analyze the knowledge and frequency of consumption of products with palm oil in college population.

**Methods:** descriptive cross-sectional study.

**Results:** 80 students participated in the study were 64 women. The average age of the sample was 23.44 years. When we analyze the relationship between the knowledge of the products with palm oil and the frequency of consumption, we obtain a statistically significant difference ( $X^2(2) = 16.57, p = .000$ ), with a moderate effect size ( $V = 0.455$ ).

**Conclusion:** The university population believes they have deficient knowledge about the foods with palm oil and don't consult the labels to check if it contains it. They indicate consuming this type of products 1 to 3 times a week. And there is an association between the frequency of consumption and the knowledge of the products with palm oil.

**Keywords:** palm oil; university population; fatty acids; knowledge; consumption;

## Introduction

Palm oil is the most used in the world. It is mainly composed by fatty acids saturated (40-45%), palmitic acid and unsaturated: 40% oleic acid (monounsaturated fatty acid), 10% linoleic acid (polyunsaturated fatty acid) [1].

This oil is obtained from the palm tree fruit (*Elaeis guineensis*) [1]. It is grown in tropical countries, where it represents an important base for the economy. Indonesia and Malaysia account for 85% of world production [2].

Palm oil is economical and versatile used as a raw material for both food and non food products. About 80% of palm oil products are used for edible application, for its ideal properties, competitive price, excellent oxidative stability, unique solid content profile, high nutritional value, free of trans fatty acids and

antioxidant properties (rich in vitamins) [3]. Palm oil is found ranging from margarine, cereals, sweets, cookies, frozen meals, snacks and baked goods, to cosmetics and fuel [2].

In recent decades, controversial studies have identified three types of risks related to consumption of palm oil: environmental, health and social [4]. Several contributions have highlighted the deforestation of tropical forests in Indonesia and Malaysia [5], the negative social impacts of palm oil production due to labor abuses and gender discrimination, and finally, the health impact of palm oil [4]. The main reason why it has been associated with negative health effects is the relatively high content of fatty acids particularly palmitic acid [6,7], which in turn have been associated with an increased risk of cardiovascular diseases and some types of cancer, or development of obesity and diabetes mellitus type 2 [6,7].

Although, some scientific studies clearly show that palm oil does not lead to high serum cholesterol levels and that it is not atherogenic [8,9]. However, in a recent review, palm oil produces higher LDL cholesterol than vegetable oils low in saturated fat, and higher HDL cholesterol than oils that contain trans fat [10].

So, the high intake of saturated fatty acids has been linked to improved levels, an important precursor of cardiovascular diseases (CVD). As a result, dietary recommendations have limited the intake of certain fatty acids for the prevention of CVD [2]. According to international guidelines, the intake of saturated fatty acids should be maintained <10% of the total energy, within a balanced diet; Within these limits, no effect of palm oil on health can be expected [8,11].

With respect to consumer information and their perceptions, information campaigns show that when the negative impact of the related product is underlined, it can produce a change in consumption products with or without palm oil, with a stronger effect for the product of palm oil than for the product without palm oil [12]. The results suggest that consumers were worried about the negative consequences that palm oil could have on their own health or the environment [4].

College students are particularly vulnerable to poor nutrition, as they barely eat three main meals, don't have breakfast and

prefer high-fat fast food as the first choice. In addition, they are already responsible for the choice of food, preparation and quantity they consume [13,14, 15, 16].

According to various studies, their eating habits are far from following a Mediterranean diet, for their low consumption of fruits and vegetables and because of eating highly processed foods rich in saturated fats, sugars or sodium and follow a diet that is not very diversified [13, 14, 15, 16].

Therefore, the purpose of this study is to analyze the knowledge and frequency of consumption of products containing palm oil in the university population.

**Methods**

**Design:** Descriptive cross-sectional study.

**Sample:** Study participants were students of 1st to 4th degree course of nursing in Faculty of Nursing and Ocupacional Therapy at the University of Extremadura, aged 18 and 35 years.

**Data collection:** On April of 2018, students responded during the theoretical nursing classes.

**Instruments used:** A self-administrated (multiple choice1) questionnaire consisting of two question of socio-demographic and eighth question about knowledge and perception of the consumption of products with palm oil with multiple anwsers.

**Data Analyses:** The statistical package SPSS (version 23.0) was used for the statistical analysis. The results of the descriptive analysis are represented as measures of central tendency (mean, median) and dispersion (standard deviation), in the case of quantitative variables, and as frequencies and percentages, in the case of qualitative variables. Bivariate analysis was performed by Chi-squared for qualitative variables. Cramer’s V was chosen as association magnitude. A confidence level of 95% (p < 0.05) was accepted for all statistical analysis.

**Results**

A total of 80 students participated in the survey of whom 64 (80%) were women. The mean age of the sample was 23,44 years (standard deviation [SD]=3.438).

The most of students didnt check the label of the product if it contained palm oil (70%), but they indicated to know which products contain palm oil by 45%. However they were aware of the frequency of 1 to 3 times a week of consumption of palm oil. Among the frequency of some products consulted, it was evident that 63.7% consume industrial pastries monthly and 71.3% cereals. An habitual consumption of cookies in 52.5%. Precooked foods were consumed once a month (55%). Snacks were mainly consumed on weekends (43.8%). (Table 1)

**Table 1:** Knowledge and frequency of consumption of products with palm oil

Variables	Categories	Total n (%)
Check product label if it contains palm oil	Yes	24 (30%)
	No	56 (70%)
Knowledge about the products that contains palm oil	Yes	36 (45%)
	No	44 (55%)
Frequency of conscious consumption of palm oil	No day a week	28 (35%)
	1-3 time per week	43 (53%)
	4 or more per week	9 (11.3%)
Frequency of industrial bakery consumption *	Daily	6 (7.5%)
	Weekly	23 (28.7%)
	Monthly	51 (63.7)
Usual consumption of cookies *	Yes	42 (52.5%)
	No	38 (47.5%)
Frequency of cereals consumption *	Daily	6 (7.5%)
	Weekly	17 (21.3%)
	Monthly	57 (71.3%)
Frequency of pre-cooked food consumption*	Daily	0
	2-3 times per week	30 (37.5%)
	Once a month	44 (55%)
	Never	6 (7.5%)
Frequency of snacks consumption *	Daily	3 (3.8%)
	On weekends	35 (43.8%)
	1 -2 times a month	32 (40%)
	Never	10 (12.5%)

\* Indicate product of trademark that contain palm oil.

There is a statistically significant difference between the Knowledge of the products with palm oil and the frequency of consumption (X2(2) =16.57; p=.000), with a moderate size of the effect (V=0.455).

## Discussion

Our result does not agree with the comments made by Loria et al. [17], where the authors indicate that 73.8% read the nutritional labels in the supermarket. In addition, Babio et al. [18] explain that consumers checked calories (61%), fats (39%) and cholesterol (25.7%). Although they conclude that the population presents a low level of nutritional information that allows to make a better choice of the products that are bought. In this case we agree with the deficient knowledge presented by the sample of our study.

We emphasize the importance of the need to implement strategies to promote healthy habits in the school and university community, in order to consolidate healthy habits in adulthood. Regarding the consumption of precooked foods, we coincide approximately with the prevalence shown by Sainz et al. [19] of 49.4%.

Also, coinciding with other studies on eating habits in university students [13, 14, 15, 16], they are far from following a varied and balanced diet, with an increased consumption of snacks, cookies, precooked dishes, rich in saturated fats, mainly made with palm oil.

## Conclusions

According to the results obtained in the survey, the university population believes they have deficient knowledge about the foods with palm oil and don't consult the labels to check if it contains it. They indicate consuming this type of products 1 to 3 times a week. And there is an association between the frequency of consumption and the knowledge of the products with palm oil.

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