

# A Survey on Knowledge, Attitude and Practice of Dairy and Non Dairy Alternatives amongst Indian Population

## Research Article

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### Abstract

The Greek mythology illustrates Milky Way formed out of breast milk of the Queen Hera, Zeus's wife the night sky. Milk plays a very important role in our culture from feeding the children to special offering to God and in various beauty cosmetics. Milk is an emotion more than a dairy product. India being the world's largest milk producer, responsible for 22% of global production. In the past decade, major research emphasis in all sections of food product development is to address the changing needs and to meet the present demands of consumer by creating newer alternative of health foods.

**Objectives:** To understand the Knowledge, Attitude and Practice of the participants towards different kinds of Dairy and Non-Dairy milk available in the market.

**Methodology:** The google forms were circulated in India and abroad. A total of 349 responses were received.

**Results:** Soya milk was popular milk 81.9% of participants were aware of it. Participants choose Non-Dairy over Dairy products as healthy alternatives. The participants attributed to taste (65 participants) and to being natural. Lactose intolerance and veganism were also a reason for switch. 106 participants were ready to try non-dairy products. Almost 79.1% were aware of then on-Diary milk available in the Market.

**Conclusion:** Knowledge on non-dairy products was present among the participants. The attitude for change was observed on a positive note. Maximum participants choose Non-Dairy over Dairy products as healthy alternatives.

**Keywords:** Milk; Non dairy products; Plant-based diet

### Introduction

Milk is one of the most commonly consumed food products and relished by the human population for more than 8000 years, due to its nutritional value and its versatility in satiating appetite. Milk is a wholesome complete food as it contains several essential nutrients and is an important part of dietary recommendations in many countries [1,2]. However, dairy production has gone through several environmental impacts. The most probable environmental issues associated to production of milk are air and water pollution, soil degradation and loss of biodiversity.

Recently, consumers have shifted towards plant-based diet which includes cereal, legumes, seeds, nuts, fruits and vegetables because of varied reasons such as an aversion to animal savagery, environmental awareness and an inclination for a healthy lifestyle [4]. Therefore, trends like veganism, vegetarianism, lacto-vegetarianism and ovo-vegetarianism have emerged.

Over the past decade, major research emphasis in food product development is to address the changing needs and to meet the current demands of consumer by creating new alternatives for health foods. In today's world, beverages are no longer considered simply as

thirst quenchers; consumers look for specific functionality in these drinks, which forms a part of their lifestyle [5]. Thus, acceptance and experience of a new food depends upon various factors includes a good odor, familiar taste, the health benefits, the nutritional information and also the environmental aspects of the product. All these criteria's have an impact on increasing or decreasing the public's willingness to try a new food product [6].

Nowadays, due to its numerous positive health benefits, the use of plant-based milk alternatives has widely spread across the globe. It may be a right choice for people looking out for dairy free alternatives [5]. Like Individuals with cow's milk allergy, lactose intolerance, calorie concern or hypo-cholesterolemia may prefer these beverages or products. These plant-based alternatives can also serve as an inexpensive alternate to poor economic group of developing countries and in places, where cow's milk supply is insufficient.

Plant-based milk alternatives are basically fluids that results from the breakdown (size reduction) of plant material, like -cereals, pseudo-cereals, legumes, oilseeds and nuts. Which is then extracted in water and further homogenized? Such fluids result in particle size distribution between the ranges of 5-20 ml which imitates the cow's milk in appearance and consistency.

Although, there is no stated definition and classification of these plant-based milk alternatives in literature, a general classification with five categories is attempted, which is as follows:

- Cereal based: Oat milk, Rice milk, Corn milk, Spelt milk.
- Legume based: Soy milk, Peanut milk, Lupin milk, Cow pea milk.
- Nut based: Almond milk, Coconut milk, Hazelnut milk, Pistachio milk, Walnut milk.
- Seed based: Sesame milk, Flax milk, Hemp milk, Sunflower milk.
- Pseudo-cereal based: Quinoa milk, Teff milk, Amaranth milk [7].

When compared to bovine milk, most of these milk alternatives lack nutritional balance; however they contain functionally active components with health promoting properties which attracts the health-conscious consumers. But, in the vegan food industry, plant-based milk substitutes are one of the unique food groups that cannot be replaced as they are used as a key ingredient in many vegan food products such as plant-based yogurt, cheese, butter, ice cream, etc [8] (Figure 1).

## Methodology

The pandemic had brought life to a standstill but the technology enables us to do the impossible. Google forms were used for the survey. The google forms were circulated in India and abroad. However, this was not possible with other methods of survey. A total of 349 responses were received.

## Procedures

Google forms were circulated with a covering letter mentioning

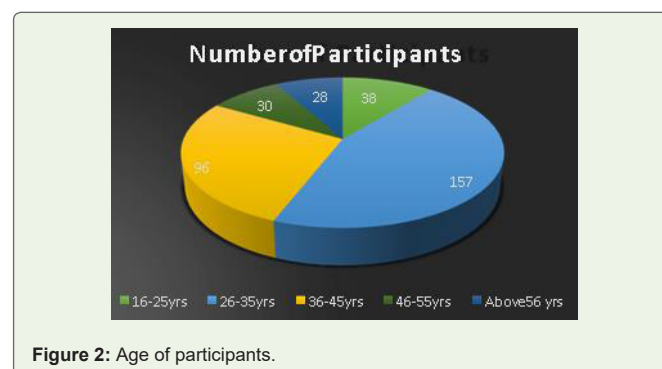
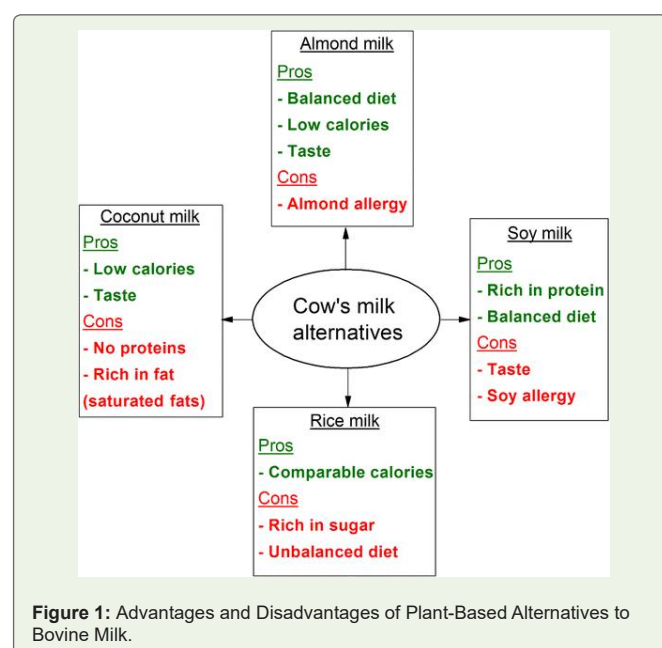
the need and the study, the purpose of the study .A paragraph about confidentiality was also mentioned in the covering letter. The survey was a voluntary; those who were willing only participated in the survey. The results were complied thereafter.

## Demographic Information

The survey method had a positive response in a short time. 349 subjects participated in the survey. 94 (27%) were male and 255 (73%) were female. The age group that was surveyed had varied participant's between 16 years to above 56 years. Majority of the participants were between the age group 26- 35 years, 157 (45%) participants. 96 participants (27.5%) were between age group 36 - 45 years. A mere number of participants 28 (8%) were above 56 years (Figure 2).

## Assessment of nutritional knowledge

54% of the retail market constitutes of food and grocery. The knowledge gap about market and consumers is one of the constrain for the large companies to enter the retail market even after a huge growth potential. Parameters considered important by customers during shopping have not been studied enough [10].



In the study the helpers for grocery shopping were identified and studied to access the nutritional knowledge of the participants 154 (44 %) shopped by themselves and a large amount 180 (51%) were assisted by their spouses. 10 (35%) were helped by maids or parents and 5(2%) were helped by their kids (Figure 3).

According to WHO, Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [11].

WHO's Global Health Estimates, states the top 10 reasons for death globally in 2019 in which ischemic heart disease tops the chart [12]. The estimates showed the link between eating pattern and being healthy and symptoms of IHD (Ischemic Heart disease) like blood pressure, diabetes and Obesity (Figure 4).

## Results

This Study has showed that most of the participants were middle aged (between 25-35 years) with a family income of lesser than 30,000 per month. 58.5% participants concluded that nondairy milk was more expensive than dairy milk and 19.8% participants thought dairy milk as affordable.

Very few participants were intolerant to milk and its products (about 20%). Most of the participants have knowledge about nutrition as they shopped themselves or with their spouse.

Almost 79.1% were aware of the fact that non-Dairy milk available in the Market. Among the Non-Dairy milk products, about

81.9% participants were aware of Soya milk. Hemp milk was the least identified by participants that is about 11.7%.

Most of the participants were making healthy choices in food (74.8%) by cutting down on processed foods and try healthier foods by including more fruits, vegetables into their diet. About 52.7% were exercising regularly.

Soya milk (57.3%), almond milk (44.4%) and coconut milk (56.2%) were tasted by the participants. Coconut milk (12.3%) was majorly used. Maximum participants used dairy (297) and non-dairy milk (111) in beverages like tea and coffee and minimum participants used them as pre bed drink.

Protein remains a most debatable nutrient for selection of milk revealed that about 39.3% participants thought the protein content in Non-Dairy milk were high. Also, equally large number of participants (47.3%) thought the sugar content of Non-Dairy milk was higher as they always were available in the sweetened forms rather than the natural forms.

Majority of the participants used Cow's milk (53.6%) against buffalo milk (6.3%).

Maximum of participants (33.5%) buy milk from the local vendor. It has impact on the variety and brand of milk. The rest (29.5%) of the participants purchased milk from traditional booth and least (10%) took milk from supermarket supply.

The practice of using branded milk regularly was among majority of the participants (72.5%) and least consumed were newer brands (2.8%) respectively. The participants (75%) were well aware of reading food labels for various factors but minor group of participants (8%) did not even think to read the food labels.

Maximum of 120 participants choose Non Dairy over Dairy products as healthy alternatives. Lactose intolerance and veganism were also areas on for switch.

## Limitations of the study

Samples could have been given to check the acceptability of the taste of various milk alternatives. Due to pandemic, this would not have been possible. Individual target specific food inclusion and exclusion do not have any standardized reliable diagnostic marker show ever it is more of the individual choice.

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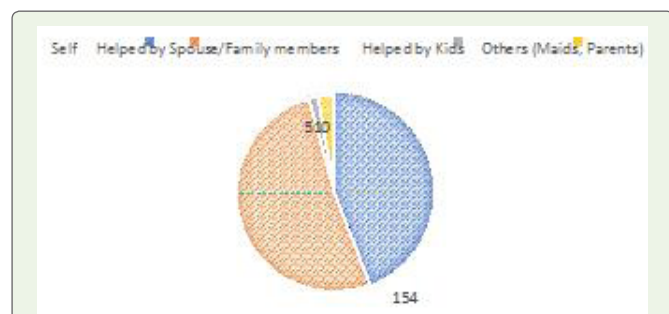


Figure 3: Grocery shopping helped by people.

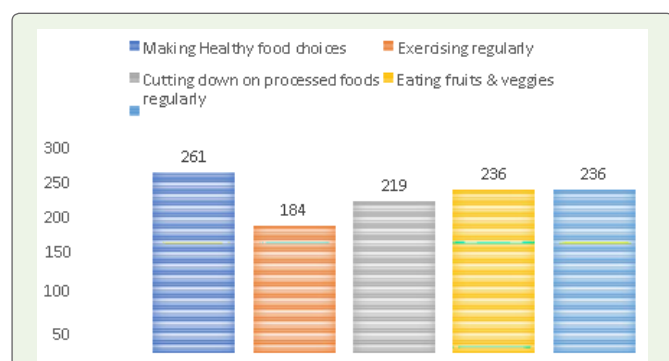


Figure 4: Describing being healthy.

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