# An Investigation Of The Therapeutic Benefits Of Antioxidants Found In Locally Accessible Fruits

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**Abstract**
Over the past 30 years, plant-based products have drawn more interest due to their potential as therapeutic and cancer-prevention agents. Throughout the world, medicinal plants are a popular substitute for traditional cancer treatments in many nations. The prime objective of the present study was to determine the level of awareness about antioxidant rich fruits among the selected respondents. Based on the survey study among the selected 250 respondents, the present antioxidant in locally available fruits. The first part of the survey depicted about the demographic profile of the respondents including the variables like gender and age-group. The second section of the survey study and its interpretation revealed with the descriptive study based on 12 parameters to upgrade the knowledge about the dietary nutrition among the selected respondents and their awareness about the consistently available antioxidant rich fruits in their day-to-day life and their nutritional habits. The questionnaire is based on food frequency questionnaire (FFQ).
**Results** The result shows maximum number of respondents were of 18-28 age group showing 45.6%, more amounts of fruits of 56.6% compared to vegetarians of 62.8% of fruit intake. Form of Consumption of fruits, a greater number of respondents of 45.6% was consuming fruits in raw form. Consumption of seasonal fruits**,** 79.6%, Idea about antioxidant rich fruits, 67.6%, Health benefits of antioxidant rich fruits, 62.8% of respondents have inspiration about the health benefits of antioxidant rich fruits.
**Conclusion** It is concluded that overall survey of the dietary information of the selected respondents revealed that maximum number of respondents has elaborate idea concerning the antioxidant and anticancer property of fruits.

**Key words -** Antioxidant, Anticancer, Dietary information, Demographic, Descriptive

## Introduction:

Foods, drinks and sometimes dietary supplements are part of the diet sand types and quantities consumed commonly differ on a daily basis. Therefore, individual diets are difficult to measure. The purpose of dietary assessment is frequently to obtain information about the habitual energy intake (EI) and nutrient intake, by asking individuals to report the food they consume (Sholler DA, 2002)

Numerous phytochemicals that are biologically active have been found in plant foods such eggs, grains, nuts, legumes, vegetables, and fruit. Vegetables and fruits are the plant food category with the widest variety of species. The human diet has the potential to significantly increase in complexity and variety thanks to fruits and vegetables (Lampe, 1999). Several common malignancies (Steinmetz and Potter, 1996), cardiovascular disease (Ness and Powles,1997), and other chronic diseases may be warded off by a diet high in fruits and vegetables.

According to the World Health Organization (WHO), each person should consume more than 400g of fruits and vegetables each day. Numerous colorful phytochemicals in fruits and vegetables that may act as chemo protectors (due to different pigments). In order to absorb a diversity of phytochemicals, the recommendations call for choosing 1 serving per day of fruits and vegetables from each of the seven color categories (red, yellow-green, red-purple, orange, orange-yellow, green, and white-green) (Liu. R.H, 2013). Numerous kinds of phytochemicals, including fibers, pigments (such as chlorophylls, carotenoids, flavonoids, and betalains), phenolic compounds, and micronutrients (vitamins and minerals) are all present in fruits and vegetables (Yahiaet al.,2019).

## Methodology

### Selection of the subjects

Samples of 250 respondents from Azhagiamandapam, Kanyakumari District were selected for my study

### Formulation of the Tool

Well framed questionnaire was formulated to collect the details of the respondents. Questionnaire was divided into three parts.

The first part of the questionnaire was to know about the socio demographic details regarding age, sex, place of residence The second part of the questionnaire was to know about the fruit consumers in Kanyakumari District to gain a general understanding of dietary information and its impact on the anticancer activities of locally accessible fruits and also to gain a better understanding about soursop fruit.

**Result and Discussion**

**Table :1 Age group of Respondents**

| | Age | No. of subjects | Percentage |
|---|---|---|---|
| | 18-28 | 114 | 45.6% |
| | 29-39 | 83 | 33.2% |
| | 40-50 | 53 | 21.2% |
| | Total | 250 | |

The table 1 indicated that the survey was carried out in 250 respondents of different age group of people ranging from 18-28 (45.6%), 29-39 (33.2%) and 40- 50 (21.2%), Among the different age group of people, maximum number of respondents were of 18-28 age group showing 45.6%.

**Table :2 Gender of the Respondents**

| Sex | No. of subjects | Percentage |
|---|---|---|
| Male | 91 | 36.4% |
| Female | 159 | 63.6% |
| Total | 250 | |

The table 2. designated the gender selected for the survey, along with the selected 250 respondents, maximum numbers of respondents of the experimental group were female with 63.6% and male 36.4%.

**Table :3 Dietary Information of the selected Respondents**

| SI. NO | Dietary Information | Category | No. of subjects | Percentage |
|---|---|---|---|---|
| **1.** | **Dietary Pattern** | Vegetarian | 93 | 37.2% |
| | | Non-Vegetarian | 157 | 62.8% |
| **2.** | **Fruits in Diet** | Yes | 144 | 57.6% |
| | | No | 106 | 42.4% |
| **3.** | **Family members intake fruits** | Yes | 149 | 59.6% |
| | | No | 101 | 40.4% |
| **4.** | **Favorite Fruit** | Mango | 80 | 32% |
| | | Apple | 90 | 36% |
| | | Banana | 69 | 27.6% |
| | | Watermelon | 39 | 15.6% |
| | | Orange | 126 | 50.4% |
| | | Pomegranate | 152 | 60.8% |
| | | Pine apple | 44 | 17.6% |
| | | Guava | 36 | 14.4% |
| | | Strawberry | 27 | 10.8% |
| | | Grapes | 198 | 79.2% |
| **5.** | **Form of Consumption** | Raw | 114 | 45.6% |
| | | Juice | 95 | 38% |
| | | Salad | 41 | 16.4% |
| **6.** | **Amount spend to buy fruits per week** | 100 | 25 | 10% |
| | | 200 | 37 | 14.8% |
| | | 300 | 138 | 55.2% |
| | | More than 300 | 50 | 20% |
| **7.** | **Often including fruits in diet** | Daily | 75 | 30% |
| | | Weekly | 165 | 66% |
| | | Monthly | 10 | 4% |
| **8.** | **While buying fruits what you look for** | Price | 68 | 27.2% |
| | | Taste | 79 | 31.6% |
| | | Color | 59 | 23.6% |
| | | Nutritive Value | 44 | 17.6% |
| **9.** | **Consume seasonal fruits** | Yes | 199 | 79.6% |
| | | No | 51 | 20.4% |

| | | | | |
|---|---|---|---|---|
| **10.** | **Idea about antioxidant rich fruits** | Yes | 169 | 67.6% |
| | | No | 81 | 32.4% |
| **11.** | **Super fruit for Cancer** | Yes | 181 | 72.4% |
| | | No | 69 | 27.6% |
| **12.** | **Health benefits of antioxidant rich fruit** | Yes | 157 | 62.8% |
| | | No | 93 | 37.2% |

The Table 3 illustrated the dietary information regarding the selected respondents based on twelve different criteria like Dietary Pattern of Vegetarians and Non vegetarians, Fruits used in their Diet, Family members intake fruits, Favorite Fruits, Form of Consumption of fruits, Amount spend to buy fruits per week, Often included fruits in their diet, While buying fruits what they look for, Consumption of seasonal fruits, Idea about antioxidant rich fruits, Super fruit for Cancer and Health benefits of antioxidant rich fruits. In the first parameter, Dietary Pattern of Vegetarians and Non vegetarians, non-vegetarians consume more amounts of fruits of 62.8% compared to vegetarians of 37.2% of fruit intake. In the second parameter, Fruits used in their Diet, maximum number of respondents consume fruits in their diets of 57.6%. In the third parameter, family member's intake fruits, a greater number of family members consume fruits of 59.6%. In the fourth parameter, Favorite Fruits of the selected respondents was pomegranate of 60.8% and least favorite fruits were strawberry of 10.8%. In the fifth parameter, Form of Consumption of fruits, a greater number of respondents of 45.6% was consuming fruits in raw form. In the sixth parameter, Amount spend to buy fruits per week, maximum number of respondents of 55.2% spend Rs.300 per week to buy fruits. In the seventh criteria, maximum number of respondents includes fruits weekly in their diet of 66%.In the eighth parameter, while buying fruits what you look for, 31.6% of maximum respondents look for taste. In the ninth parameter, Consumption of seasonal fruits**,** 79.6%of selected respondents go for consuming seasonal fruits compared to non-seasonal fruits. In the tenth parameter, Idea about antioxidant rich fruits, 67.6% of maximum respondents have idea about antioxidant rich fruits. In the eleventh parameter, Super fruit for Cancer, 72.4% of respondents have idea about anticancer fruits. In the twelfth parameter, Health benefits of antioxidant rich fruits, 62.8% of respondents have inspiration about the health benefits of antioxidant rich fruits. The above overall survey of the dietary information of the selected respondents revealed that maximum number of respondents has elaborate idea concerning the antioxidant and anticancer property of fruits.

**Table :4 Knowledge of the respondents about soursop**

| Si. No | Knowledge about soursop | Yes/No | No. of subjects | Percentage |
|---|---|---|---|---|
| **1** | **Know about soursop** | Yes | 205 | 82% |
| | | No | 45 | 18% |
| **2** | **Do you like soursop** | Yes | 159 | 63.6% |
| | | No | 91 | 36.4% |
| **3** | **Consumption of soursop** | Raw | 147 | 58.8% |
| | | Juice | 103 | 41.2% |
| **4.** | **Health benefits of soursop** | Yes | 134 | 53.6% |
| | | No | 116 | 46.4% |
| **5.** | **Side effects of soursop** | Yes | 118 | 47.2% |
| | | No | 132 | 52.8% |
| **6.** | **Recognize changes while consuming soursop** | Yes | 188 | 75.2% |
| | | No | 62 | 24.8% |
| **7.** | **Soursop good for cancer** | Yes | 214 | 85.6% |
| | | No | 36 | 14.4% |

**Table 4.** gives a brief idea regarding the knowledge of the selected respondents about soursop fruit and its health benefits. The survey illustrated that 82% of respondents know about the soursop, 63.6%of respondents like soursop fruit, about 58.8%of respondents consume soursop in raw form, 53.6% of respondents revealed the health benefits of sour sops. 52.8% of respondents does not know the side effects of soursop. 75.2% of respondents recognized changes while consuming soursop fruit. Finally, 85.6% of respondents identified the anticancer property of soursop fruit compared to other fruits in the survey.

**Discussion**

Moore et al. (2023) surveyed the post-harvest disease symptoms associated with *Annona muricata* fruits displayed for sales and the disease incidence-severity, which pointed the extent of the damage caused by the symptoms. Chan and Wai-Jo, (2023) assessed the safety and tolerability of *Annona muricata* leaf extract in people living in cancer. It involves a systematic review, quality and safety analysis of commercially available *A. muricata* products, cancer cell-line studies and an open-label pilot study of *A. muricata* in people living with cancer. The present research revealed the knowledge of the selected respondents about *A. muricata* fruit and other fruits and their health benefits.

**Conclusion**

It is concluded that the above overall survey of the dietary information of the selected respondents revealed that maximum number of respondents has detailed idea concerning the antioxidant and anticancer property of fruits.

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