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Consumption pattern of fruits among non-nutrition students

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Abstract: Fruits intake is linked to lower the risk of NCDs such as CVD, diabetes and some types of cancers. Fruits contain micronutrients, antioxidants, phytochemical compounds and fibre, which enable them to play a protective role against major diseases. Daily intake of five servings of fruits has been linked to psychosocial well-being, and reduced risk of diseases. The present study aimed to know the consumption of fruits among non-nutrition students pursued their post-graduation in non-nutrition disciplines. The information regarding the preference, consumption pattern and daily intake of fruits among the non-nutrition students were collected using the questionnaire through online platform. Around 100 responseswere taken for analysis and it was found that nearly 49% of the study participantshad fruits in their regular diet and 47% prefer rarely and only four percent not preferred fruits. Only 12%consumed fruits at leastdailyonce,67%tookweeklytwice, only two percent took more than 100gms of fruits per day, five percent consumed around 100gms. It was clear that cost was considered by most of the participants (75 ± 20.5) followed by nutritive value (62 ± 8.6), taste (54 ± 14.2), availability (46 ± 11.7), colour (26 ± 10.9) and popularity by 12 ± 4.4 respondents. Nearly 46% of the student respondents were aware of the antioxidant presence in the fruits. The awareness towards the benefits of fruits, nutritive value and recommended allowance of fruits have to be intervened to non-nutrition students as their self- awareness is not adequate. Strategies to increase fruits consumption in this population are needed.

Keywords: Antioxidants, consumption, fruits, non-nutrition, preference

INTRODUCTION

Non-communicable diseases (NCDs) account for more than 63% of all deaths globally, making them the leading cause of mortality. Consumption of fruits and vegetables is linked to lowering the risk of NCDs such as CVD, diabetes and some cancers, and has further been shown as one of the critical health behaviours that can help prevent mortality related to NCDs (Mishra et al., 2015). Fruits contain micronutrients, antioxidants, phytochemical compounds and fibre, which enable them to play a protective role against major diseases. Daily intake of five servings of fruits has been linked to psychosocial well-being, and reduced risk of diseases (Boehm et al., 2018). Fruits are linked to better health, when consumption is adequate.The global recommended (adequate) consumption is five servings (400 g) of both fruits and vegetables per day

Fruits and vegetables are generally considered as healthy. The Dietary Guidelines for Americans 2010 recommend to take one-half of the plate with fruits and vegetables. Myplate.gov also supports that one-half the plate should be fruits and vegetables. The Indian food guide pyramid also recommends liberal amounts of fruits and vegetables. The content of energy and nutrients vary greatly in different kinds of fruits and vegetables. And also these fruits and vegetables supply a good amount of dietary fiber which helps to decrease the incidence of obesity and cardiovascular disease. In addition they also supply large amounts of vitamins and minerals to the diet and they are the main sources of phytochemicals that function as antioxidants, phytoestrogens, and anti-inflammatory agents and through other protective mechanisms (Slavin and Loyd, 2012).

The current diet-related recommendations to prevent cancer, heart disease, diabetes, and other chronic illnesses are quite similar and compatible. Cancer prevention recommendations include reducing consumption of fat, meat, and alcohol; increasing consumption of plant-based foods, particularly fruits and vegetables; and maintaining a healthy body weight. Dietary recommendations for heart disease prevention include reduction of fat consumption increased

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consumption of fruits and vegetables and the reduction or prevention of obesity .Although there is some controversy about the specifics of dietary recommendations for particular conditions there is general agreement that a diet rich in a variety of fruits and vegetables, and containing no more than a moderate amount of fat, is highly desirable as a prevention strategy (Duyn and Pivonka, 2000). Fruits are also rich in fibre and helps to reduce the risk of obesity. The potassium content is high in fruits and vegetables which help to reduce the risk of high blood pressure and development of kidney stones and also reduces the risk of bone loss.

Fruits are the main sources of essential nutrients that are under consumed, like potassium, dietary fiber, vitamin C, and folate (folic acid). Fruit rich in potassium include bananas, prunes and prune juice, dried peaches and apricots, cantaloupe, honeydew melon, and orange juice. Dietary fiber present in the fruits, helps to reduce blood cholesterol levels and may lower risk of heart disease and obesity (Chong et al., 2010). Fiber also helps for proper bowel function and reduces the risk of constipation and diverticulosis. The diet rich in fruits containing dietary fiber provide a feeling of fullness with fewer calories. Whole fruits as such contains dietary fibre, whereas fruit juices does not or contains very less fibre. Vitamin C which is highly present in citrus fruits helps for the growth and repair of all body tissues, helps heal cuts and wounds, and keeps teeth and gums healthy. The Folate (folic acid) present in fruits and vegetables helps in the production of red blood cells (Slavin, 2008).Fruits are rich sources of antioxidants. There is good evidence that eating a diet that includes plenty of vegetables and fruits is healthy, and official U.S. Government policy urges people to eat more of these foods (Kaur and Kapoor, 2001).Continued attention to increasing fruit and vegetable consumption is a practical and important way to optimize nutrition to reduce disease risk and maximize good health. Hence the present study was conducted with the objective, to know the preference, pattern and frequency of consumption of fruits among the nutrition students.

METHODOLOGY

The study took place at Coimbatore and the study participants were the students between 20 to 24 years of age pursued their postgraduation in non-nutrition disciplines. Students who were less than 18 years of age or greater than 24 years of age were excluded. The information regarding the preference, consumption pattern and daily intake of fruits among the non-nutrition students were collected using the questionnaire. The questionnaire was framed in Google form and the link was sent to the college students through whatsapp and around 100 students submitted the forms completely. Incomplete forms were excluded from the study. The received responses were analyzed using Microsoft Excel sheets and the results were expressed in percentage and mean with standard deviation.

RESULTS AND DISCUSSION

1. Background information of the subjects

The participants of the present study were the 100 college students underwent their post-graduation.Among the subjects, 52% (52) were female and 48% (48) were male participants. It was found that nearly 49% of the study participants took fruits in their regular diet and 47% preferred rarely and only four percent not preferred fruits in their diet. It was identified that seasonal fruits were preferred by 95%of the study participants.

2. Frequency of fruits consumption

Table 1
Frequency of fruits consumption

Frequency of fruits consumption	No of subjects (n=100)	
	No	%
Daily	12	12
Weekly twice	67	67
15 days once	8	8
Monthly once	13	13
TOTAL:	**100**	**100**

The frequency of fruits consumption among the non-nutrition students were analyzed and found

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thatamongthetotalresponses,12%consumed fruits at leastdailyonce,67%tookweeklytwice, Eight percent and 13% reported that they had fruits 15 days once and monthly once respectively.

3. Consumption patternoffruits

a. Timing of fruits intake

Amongtheselected nutrition students,17% consumed fruits with breakfast, 26% with lunch, 38% during evening and 19% consumed fruits at night.

b. Form of fruits consumption

Nearly 44% of the study participants reported that they consumed raw fruits, 36% chosen chopped fruits and 20%as fresh fruit juice. It was pleasure thatno one preferred preserved fruits and its products.

c. Quantity of fruits consumption

Table 2
Quantity of fruits consumption

Quantity (g)	No of responses (n=141)	
	No	%
>100	2	2
100	5	5
50 -100	29	29
<50	64	64
Total	100	100

In a study (Mintah et al., 2012) the major findings were that, students (65%) significantly do not eat the recommended serving of fruits in a day (P<0.05), whereas approximately 6% (P<0.05) do not eat fruits at all, although their perception on the consumption of fruits was good (P<0.05). In the present study among the respondents, only two percent took more than 100gms of fruits per day, five percent consumed around 100gms, 29% took 50 -100gmsand only 64%took less than 50gms.

d. Factors considered while choosing a fruit

Table 3
Factors considered while choosing a fruit

Factors considered to prefer fruits	No of subjects (n=100) Mean ±SD
Taste	54±14.2
Color	26±10.9
Nutritive value	62±8.6
Popularity	12±4.4
Cost	75 ± 20.5
Availability	46 ± 11.7

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Factors that have been documented to have an influence on consumption of fruits and vegetables include age, gender, level of education, socio-economic status, cost, availability of and access to fruits and vegetables, knowledge of fruits and vegetables consumption, and taste. From the above table it was clear that cost was considered by most of the participants (75 ± 20.5) followed by nutritive value (62 ± 8.6), taste (54 ± 14.2), availability (46 ± 11.7), colour (26 ± 10.9) and popularity by 12 ± 4.4 respondents.Strategies to increase fruits consumption in this population are needed.

4. Awareness about the antioxidant present in the fruit

Table 4

Awareness about the antioxidant present in the fruit

Aware about the antioxidant present in the fruit	No of subjects (n=100)	
	No	%
Yes	46	46
No	22	22
Not sure	13	13
Maybe	19	19
TOTAL:	**100**	**100**

Nearly 46% of the student respondents were aware of the antioxidant presence in the fruits and 22% were unaware, 13% reported that they were not sure and 19% recorded as it may be.It is important for nutrition educators to deal with dietary behaviors that are associated with specific diseases adapted to explicit target population. Nutrient-based information alone is inadequate. Most successful strategies have been the delivery of information in several smaller doses over time. Although promoting healthy lifestyles is a challenge, it can be realized by focusing on positive "to-do" behaviors, rather than on "not-to-do" behaviors aiming at increasing the percentage of people adopting healthier eating habits especially intake of fruits and vegetables.

CONCLUSION

The awareness towards the benefits of fruits, nutritive value and recommended allowance of fruits have to be intervened to non-nutrition students as their self- awareness is not adequate. It is not adequate and satisfactory, though they preferred fruits. We recommend that cost effective and obtainability of fruits would enhance and boost up those in low income groups to have more fruits and we suggests for advances in accessibility, like home gardening, community, school and college gardens.Strategies to increase fruits consumption in this population are the need of the hour at present.

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