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## **Fruits And Vegetables Consumption Among Dental Students in Private Dental Colleges**

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## Fruits And Vegetables Consumption Among Dental Students in Private Dental Colleges

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### ABSTRACT

The objective of this study was to assess the consumption of fruits and vegetables among dental students. This is a cross sectional questionnaire survey conducted among dental students in various private dental colleges. A convenience sampling method was used for the study. A total of 107 students have responded to the survey. Participants have been randomly enrolled in the online survey through a survey planet. A validated questionnaire consists of 20 closed ended and yes/ no questions distributed to assess their consumption of fruits and vegetables in their regular life. The responses have been taken and were analysed. The results were expressed as pie charts. 93.4% of the participants said yes to liking for having fruits and 6.6% of them said no . The study concluded that there is an optimum consumption of the fruits by the dental students and they were aware of the benefits of including fruits in their diet.

**Keywords:** consumption, Fruits, Dental students, Awareness, Benefits

### INTRODUCTION

Fruits and vegetables are considered in dietary guidance because of their high content of dietary fiber, vitamins, minerals, especially electrolytes; and more recently phytochemicals, especially antioxidants. Various research have been associated with low intake of fruits and vegetables with chronic diseases such as cardiovascular diseases, blood pressure, hypercholesterolemia, osteoporosis, many cancers, chronic obstructive pulmonary diseases, respiratory problems and mental health problems. To maintain good health intake of fruits and vegetables, is recommended among students (Dhandevi and Jeewon, 2015). Fruits and vegetables include a group of plant foods which contains a lot of energy (Slavin and Lloyd, 2012). Hypertension is the most common factor for cardiovascular disorders and is essentially associated with abnormal lipid and altered glucose metabolism. Among this to reduce the risk factor for cardiovascular disorders, fruits and vegetables play a major role, due to their high content of fibres, antioxidants and complex carbohydrates (Slavin and Lloyd, 2012). vitamin C fruits, and vegetables remained in our regular life. Antioxidants from dietary supplements were not associated with depression. Antioxidant, fruit, and vegetable intakes were less in individuals and led to depression (Payne *et al.*, 2012). A high intake of fruit and vegetables can make a significant contribution to decreasing mortality from certain diseases. The challenge lies in creating the environment that facilitates changes in dietary habits such as the increased intake of fruit and vegetables (Schneider *et al.*, 2007). Intake of various fruits and vegetables decrease the anxiety and depression level of the students (McMartin, Jacka and Colman, 2013). The authors indicate that intake of green leafy vegetables, rather than fruit, might have a genuine protective effect against lung cancer (Dosal-Díaz *et al.*, 2008). Intake of fruits and vegetables prevents rectal cancer (Annema *et al.*, 2011). Nowadays the transition from adolescence to young adulthood is a period, where often characterized by an unhealthy lifestyle in which youngsters become independent and adopt lasting health behavior patterns (Al-Otaibi, 2013). The aim of the study is to identify the consumption of fruits and vegetables among the dental students in private dental colleges. The author said that useful information about the health benefits of abundant fruit and vegetable consumption should be widely disseminated. (Kanungsukkasem *et al.*, 2009) this vast research experience has inspired us to research about fruits and vegetables consumption among dental students in private dental colleges. Our team has extensive

knowledge and research experience that has translated into high quality publications (Choudhari and Thenmozhi, 2016; Govindaraju, Jeevanandan and Subramanian, 2017; Ravi *et al.*, 2017; Vikram *et al.*, 2017; Gupta, Ariga and Deogade, 2018; Hannah *et al.*, 2018; Kavarthapu and Thamaraiselvan, 2018; Pandian, Krishnan and Kumar, 2018; Ramamurthy and Mg, 2018; Ashok and Ganapathy, 2019; Ramesh *et al.*, 2019; Sharma *et al.*, 2019; Venu, Raju and Subramani, 2019; Wu *et al.*, 2019; Samuel, Acharya and Rao, 2020) This has provided the right platforms for us to pursue the current study. Our aim is to promote fruits and vegetables consumption among dental students in private dental colleges.

## MATERIALS AND METHODS

This is a cross sectional questionnaire survey conducted among dental students in various private dental colleges. A convenience sampling method was used for the study. A total of 107 students have responded to the survey. Participants have been randomly enrolled in the online survey through a survey planet. A validated questionnaire consists of 20 closed ended and yes/ no questions distributed to assess their consumption of fruits and vegetables in their regular life. The responses have been taken and were analysed. The results were expressed as pie charts.

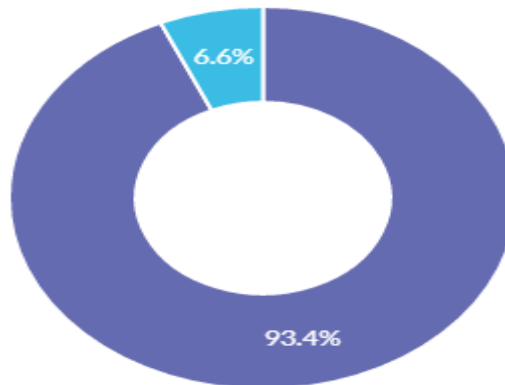
## RESULTS AND DISCUSSION

The results of the present study, The figure 1 represent the number of participants who like to have fruits, 93.4% of the participants said yes and 6.6% of them said no. Figure 2 represents what kind of fruits do you like to have in your regular life, 57.1% of the participants said citrus and 42.9% of the participants said noncitrus. Figure 3 represents the number of participants who take fruits when they are at a college or hostel. 64.1% of the participants said yes, 35.6% said no. Figure 4 represents that consumption of fruits and vegetables is less when you enter college, 64.7% said yes and 35.3% said no. Figure 5 represents, In which form do you like to have fruits, 58.7% said fruit juice, 29.8% said salad and 11.5% said none of these. Figure 6 represents the number of participants who felt changes in their body due to the consumption of fruits 72.3% said yes and 27.7% said no. Figure 7 represents if yes what are the changes due you faced, 45% participants said weight reduction and 55% said skin glow. Figure 8 represents the participants felt active due to the consumption of the fruits daily, 84.3% participants said yes and 15.7% said no. Figure 9 represents that instead of fruits what kind of food do you prefer, 47.6% said boiled food, 19.4% said fast food, 33% said natural products and foods. Figure 10 represents that participants faced any allergy problems when they consume fruits, 70.3% said no and 29.7% said yes. Figure 11 represents that number of participants felt thought pain in the morning, while eating fruits at night, 37.6% said yes, 34.7% said no and 27.7% said sometimes. Figure 12 represents that, By taking fruits is there any impact on oral health, 44% said yes and 56% said no. Figure 13 represents that, if you take citrus fruits daily it will affect your enamel, 40.6% participants said yes, 25.7% said no and 33.7% said dont know. Figure 14 if yes what are symptoms do you face, 83.1% said sensitivity and 16.9% said no. Figure 15 represents what fruits do you prefer to eat, 44.1% of the participants said seasonal, 6.9% said imported fruits and 49% said both the fruits.

In a previous study done by Kabat *et al.*, in 2010, stated that the total fruit and vegetable intake among the participants was 95% which was similar to this study response as over all 93% of the participants like to consume the fruits and vegetables (Kabat *et al.*, 2010). In previous studies the authors suggested that in adolescents and children, 100% consumption of fruit juice is not associated with incidence of dental caries and tooth erosion. However, studies have been done in adults suggesting that 100% fruit juice could contribute to increased tooth erosion or negative effects on markers of dental caries, although these studies primarily utilized oral enamel appliances, in this study where the responses were 58.7% of the participants consume their fruits by fresh juice which is related to previous studies done by Liska *et al.* 2019 (Liska, Kelley and Mah, 2019). In this study the author stated that the majority of the participants 95% gained weight without a proper diet and also suffered from oral problems, in this study 44.9% of the participants consumed fruits for weight reduction which is in contrast to previous studies done, this variation can also depend on the geographical conditions, their dietary habits and also the kind of juices they consume with adding sugar or some other sweeteners. (Chari and Sabbah, 2018) The study represents that an increase in serum carotenoids fruits and vegetables correlated with the improvement in weight and fat loss indicating that increased in fruits and vegetables consumption is an appropriate strategy for weight loss similar to few other articles (Institute of Medicine, Food and Nutrition Board and Committee to Review Child and Adult Care Food Program Meal Requirements, 2011). Consumption of fruits and vegetables is an indicator of healthy eating and healthy lifestyle. The information from Canadian Community Health Survey, that daily consumption of fruits and vegetables is approximately 15,512 denoted as healthy individuals. (Dehghan, Akhtar-Danesh and Merchant, 2011) (Alinia, Hels and Tetens, 2009).

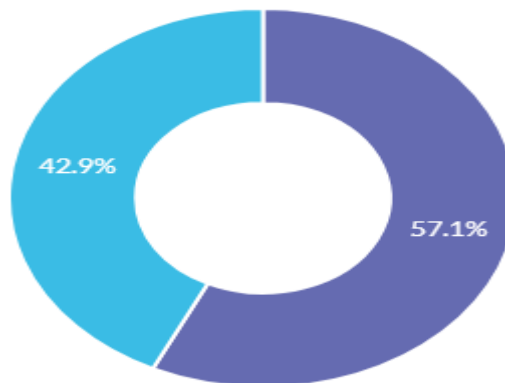
## GRAPHS

Do you like to have fruits?



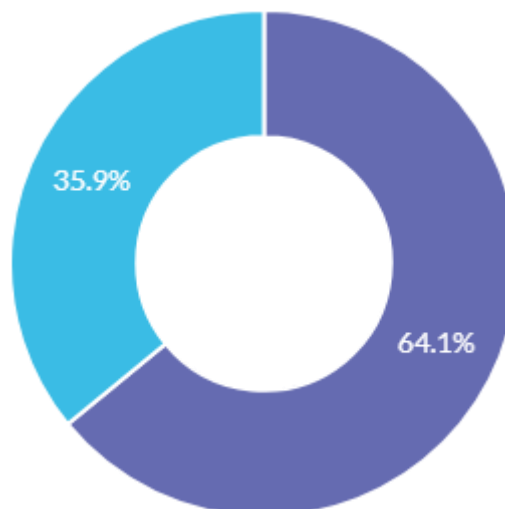
**Figure 1: The pie chart explains that 93.4% of the participants said yes ( violet) that they like to have fruits and 6.6% of the participants said no (blue).**

In daily requirements, what kind of fruits do you like to have?



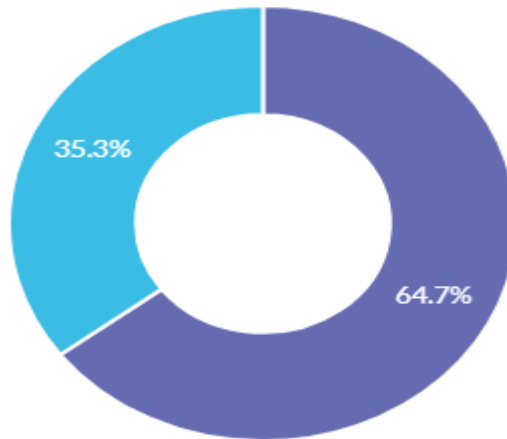
**Figure 2: The pie chart explains that 57.1% of the participants said citrus fruits ( violet) that they like to have and 42.9% of the participants said non citrus (blue).**

Do you have fruits when you are at college or hostel?



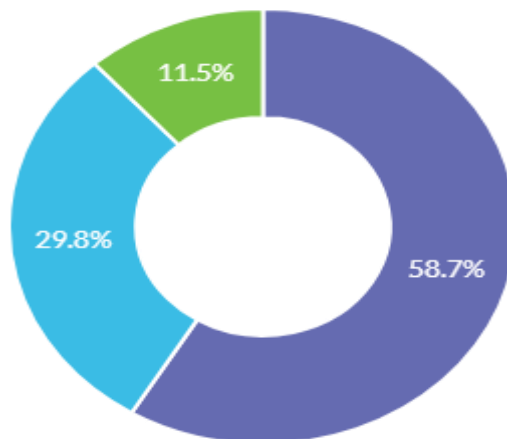
**Figure 3: The pie chart explains that 64.1% of the participants said yes ( violet) that they have fruits and vegetables in college and hostel and 35.9% of the participants said no (blue).**

Is your intake of fruits reduced when you enter college or hostel?



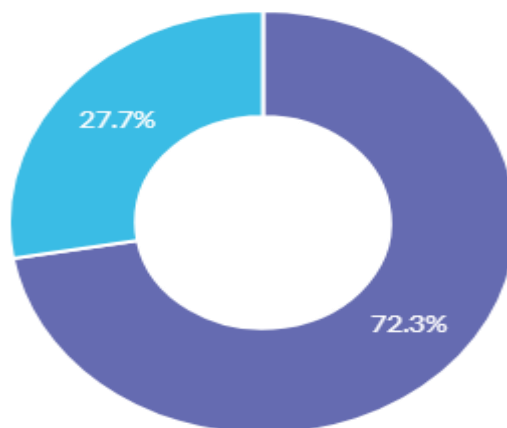
**Figure 4: The pie chart explains that 64.7% of the participants said yes ( violet) that their consumption of fruits and vegetables became less when they entered college and hostel and 35.3% of the participants said no (blue).**

In which form do you like to have fruits?



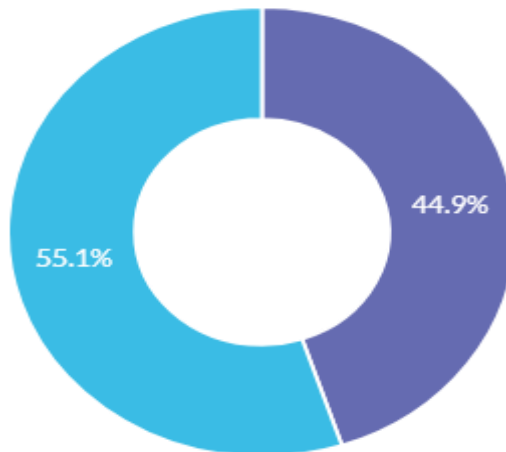
**Figure 5: The pie chart explains that 58.7% of the participants said fruit juice ( violet), 29.8% said salad ( Blue) and 11.5% of the participants said none of these (Green)**

Do you feel any changes in your body by eating fruits?



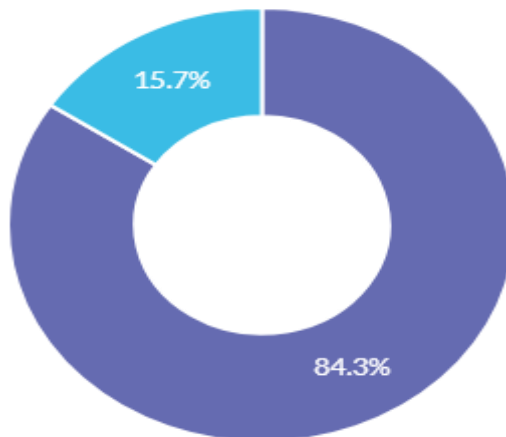
**Figure 6: The pie chart explains that 72.3% of the participants said yes (violet) that they felt changes in their body and 27.7 % of the participants said no (blue).**

If yes, what changes do you feel?



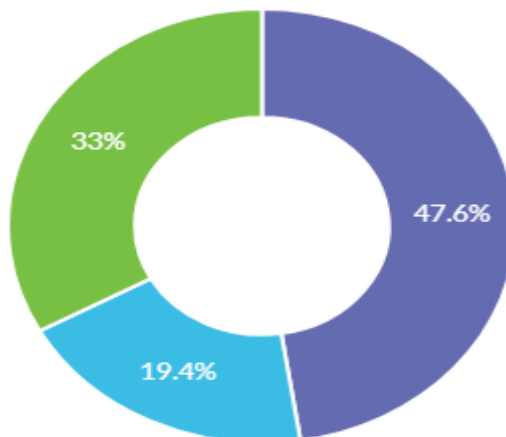
**Figure 7: The pie chart explains that 44.9% of the participants said weight loss (violet) the changes they felt in their body and 55.1% of the participants said skin glow (blue).**

Do you feel active by taking fruits daily?



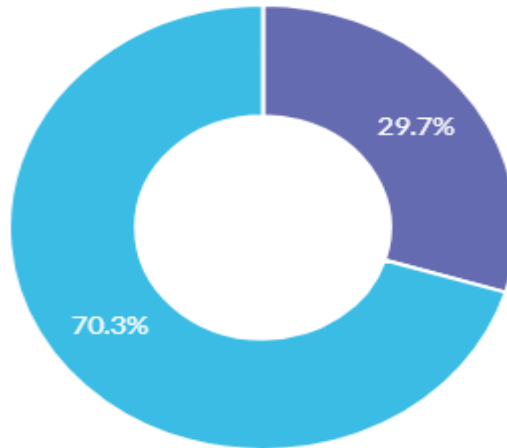
**Figure 8: The pie chart explains that 84.3% of the participants said yes (violet) that they felt active by taking fruits regularly and 15.7 % of the participants said no (blue).**

Instead of taking fruits what kind of food do you prefer?



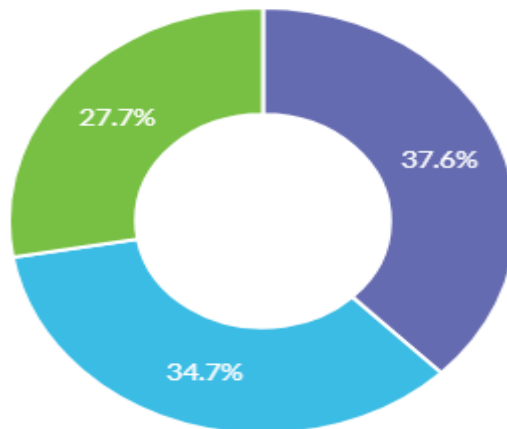
**Figure 9: The pie chart explains that 47.6% of the participants said boiled foods( violet),19.4% said fast foods ( Blue) and 33% of the participants said natural products and foods (Green)**

Is there any allergy when you have fruits?



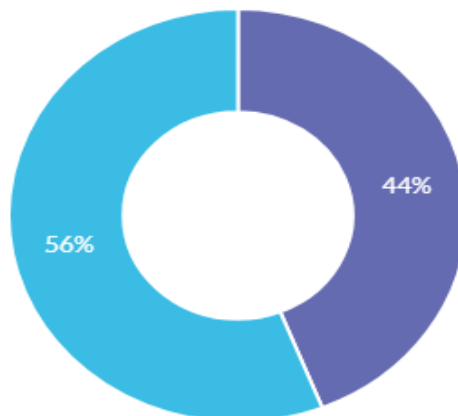
**Figure 10 :** The pie chart explains that 70.3% of the participants said yes (violet) that they have allergy reactions by eating fruits regularly and 29.7 % of the participants said no (blue).

By eating sour fruits at night. Do you feel any throat pain in the morning?



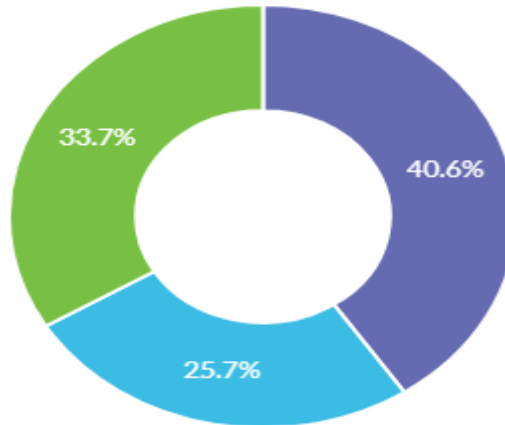
**Figure 11:** The pie chart explains that 37.6% of the participants said yes ( violet), that they have throat pain in the morning eating sour fruit at night, 34.7% said no ( Blue) and 27.7% of the participants said sometimes(Green).

By taking fruits is there any impact on oral health?



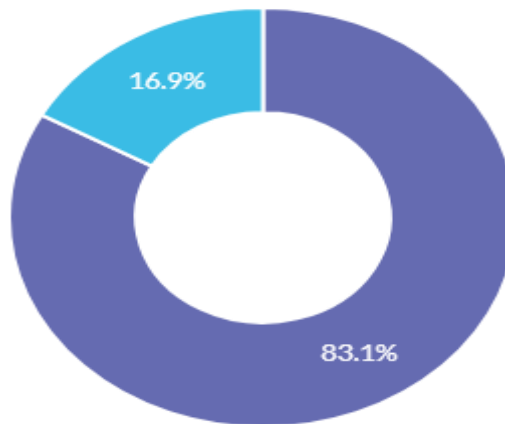
**Figure 12 :** The pie chart explains that 44% of the participants said yes (violet) that they have impacts on oral health by eating fruits regularly and 56 % of the participants said no (blue).

If you take citrus fruits daily it will affect your enamel?



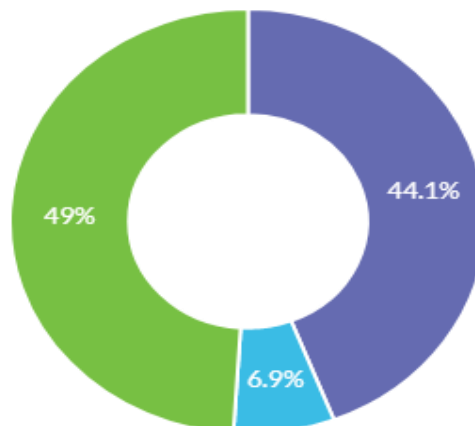
**Figure 13:** The pie chart explains that 40.6% of the participants said yes ( violet), taking citrus fruits daily will affect the enamel, 25.7% said no ( Blue) and 33.7% of the participants said sometimes(Green).

If yes what are symptoms do you feel?



**Figure 14 :** The pie chart explains that 83.1% of the participants said yes (violet) that they have sensitivity and 16.9 % of the participants said that they pain (blue).

Which fruits do you prefer?



**Figure 15:** The pie chart explains that 44.1% of the participants said seasonal fruits they have (violet), 6.9% said they have imported fruits ( Blue) and 49% of the participants said both (Green).



## LIMITATIONS

There are certain limitations in this study, The study included only dental students, Collection of data was limited small sample size, this is an online survey chances of respondents bias and error in sampling and selection, Study includes only private dental colleges.

## FUTURE SCOPE

This study should be carried out in a wide range of populations in order to know about the dietary intake among dental students, so further awareness should be created on the benefits of the fruits and vegetables that would maintain good health and immunity.

## CONCLUSION

According to the study the following conclusion can be drawn. There is optimum consumption of the fruits by the dental students and they were aware of the benefits of including fruits in their diet.

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## CONFLICT OF INTEREST

The authors have none to declare.

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