

## Awareness About The Effects And Types Of Dietary Modification In Covid 19 Among Dental Students – A Questionnaire Based Study

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### **Abstract :**

**Background :** The virus SARS COV-2 caused coronavirus disease (covid-19) across the world. So we have some other nutritional therapy. It can prevent and treat Covid 19. This deteriorated nutritional status seems to be involved within the virulence of the virus, and doubtless within the clinical outcome.

**Aim:** The aim of this study was to assess the awareness about diet modification in COVID19 among dental students.

**Methods:** A cross sectional survey was conducted online using google forms among dental students. There were 19 questionnaires that collected the impact of covid and their diet modifications during COVID-19. Multivariate logistic regression was performed to identify the influencing factors of diet modification.

**Result:** There were a total of 100 responses from dental students. In that we found that 51% of the population eat vegetables on a regular basis. 42% of the population had COVID symptoms. 48% of the population had a taste and smell sensation properly.

**Conclusion** : Food modification is highly recommended in order to increase immunity. The percentage of smoking and drinking has reduced during lockdown which is a good way to boost immunity.

**Keywords** : COVID-19, nutritional therapy, food modification, immunity, innovative technology.

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**Introduction :**

COVID-19 is the illness caused by SARSCOV2 that affects people all over the world. On March 11th, the World Health Organization declared it a pandemic. The virus that caused COVID-19 is the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), an enveloped positive-sense RNA virus that primarily impacts breathing, droplets that cause trouble in the main line of transmission (1). When SARS-CoV-2 binds to angiotensin-converting enzyme 2 (ACE2) receptors within alveolar epithelial cells, the immune system responds with infection-associated manifestation and antigen-presenting cell recruitment (2). The condition can be asymptomatic or mildly impact the upper respiratory tract, with the most severe manifestations being acute breathing syndrome and coronavirus, coronary heart failure. Furthermore, if the disease worsens, multi-organ failure is the final outcome of a poorly controlled acute infection (3). Indeed, the immunological response to the virus induced by an out-of-control infection causes pulmonary tissue damage, which lowers lung capacity. At the alveolar level, tissue damage caused by SARS-CoV-2 is characterised by pathological changes, infiltration, and hyperplasia (4), infiltration of immune cells into lung injuries, excessive phases of inflammatory reaction, thrombosis, and multi-organ failure. The Wuhan Municipal Health Committee notified the World Health Organization (WHO) that 27 people had been diagnosed with pneumonia of unknown reason with seven of them critically ill. By January, the primary cases of coronavirus 2019 (COVID-19) had been found in China: in Thailand and one in Japan (1). Being the droplets generated difficulty in the principal path of breathing. SARS-CoV-2 binds angiotensin-converting enzyme 2 (ACE2) receptors within the alveolar epithelial cells, the immune system responds via infection-associated mechanism. The harm produced by SARS-CoV-2 at the alveolar degree is characterised through pathological adjustments of the tissue, infiltration, and hyperplasia. Besides being failure, different capabilities have additionally been defined as not unusual places in severely unwell patients of COVID-19, amongst them infiltration of immune cells into lung injuries, excessive stages of inflammatory reaction, thrombosis, and multi-organ failure. (2)

When addressing COVID-19 disease, the study of nutritional status is extremely relevant since it plays a crucial role in the functionality of the system, necessary to face the viral infection. Indeed,

malnutrition is related to immune dysfunction and thus it's likely to assume that this condition could make individuals more susceptible to the virus infection (3). On the other hand, nutritional status is often negatively suffering from the SARS-CoV-2 itself, also as by the applied treatments. Patients who are hospitalised with COVID-19 tend to present malnutrition at the time of hospitalization(4). Chronic diseases that are commonly present in patients with COVID-19 (mainly diabetes, chronic obstructive pulmonary disease, insufficiency , cardiovascular diseases or dementia), also as other risk factors like socio-economic status or frailty, have negative effects on the nutritional status of those patients.(5) Additionally , during hospital stay, the prolonged immobilization, mainly in long stays in medical care units (ICU), results in muscle mass losses, making the recovery of those subjects harder. Furthermore, the necessity for assisted breathing during prolonged periods also contributes to the event of sarcopenia and malnutrition. (6)This deteriorated nutritional status seems to be involved within the virulence of the virus, and doubtless within the clinical outcome. Our team has extensive knowledge and research experience that has translated into high quality publications (7-26). Hence the study aimed at assessing awareness about effects and types of dietary modification during covid -19 infection among dental students.

#### **Materials and methods :**

A questionnaire comprising 19 questions was created using Google forms and circulated to a total of 80 dental practitioners through email. After the data was collected it was then analysed statistically using the SPSS software, version 23. Pie charts and bar graphs were used to find the results. It was a cross sectional study. It was approved by the SRB Committee.

The questionnaire comprised a series of questions including their demographic characteristics like age and gender and also a questionnaire about effects of COVID-19.

Questionnaires:

Demographics

Age

Gender

Questionnaires about diet modification

Do you eat vegetable regularly

Do you take meat everyday

Do you take butter in regular basis

Ever had COVID symptoms

Have taste and smell sensation

Cereals regularly taken

Spices like pepper, turmeric

Does your food style change during COVID

Amount of water consumed daily

Smoking habit

Alcohol consumption

Did your weight change during covid

Did you find changes in endurance level

Did your sleep cycle change

Do you use olive oil in food

Do you take fruits regularly

Do you take citrus fruits

Did you take kabasura kudineer during covid

### **Results :**

In our study analysis from the data we got from students we found that 51% of the population takes vegetables everyday and 49% of the population does not take vegetables regularly as shown in Figure 1. 42% of the population had COVID symptoms whereas 58% of the population didn't have symptoms in the past as shown in Figure 2. 48% of the population has taste and smell sensation properly whereas 52% had some problems with taste and smell idea sensation as shown in Figure 3. For 46% of the population the food style had changed during lockdown whereas for 54% it didn't change as shown in Figure 4. Correlation of gender with few questions was performed using chi square test (  $p < 0.05$  was considered significant) as depicted in Fig 5-8.

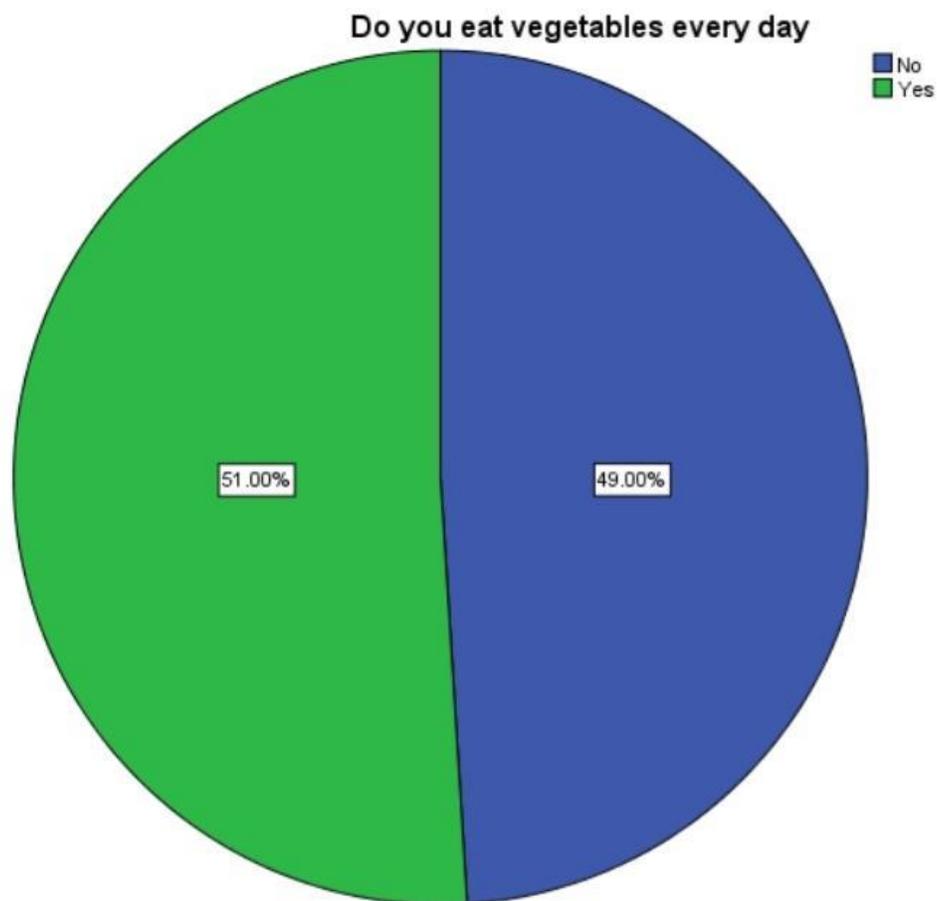


Fig 1: Pie Chart shows the response of the amount of vegetables consumed among the population. 51% of the population eats vegetables regularly. 49% of the population does not eat vegetables regularly. Green represents yes and blue represents no. The majority of the population responded that they eat vegetables regularly.

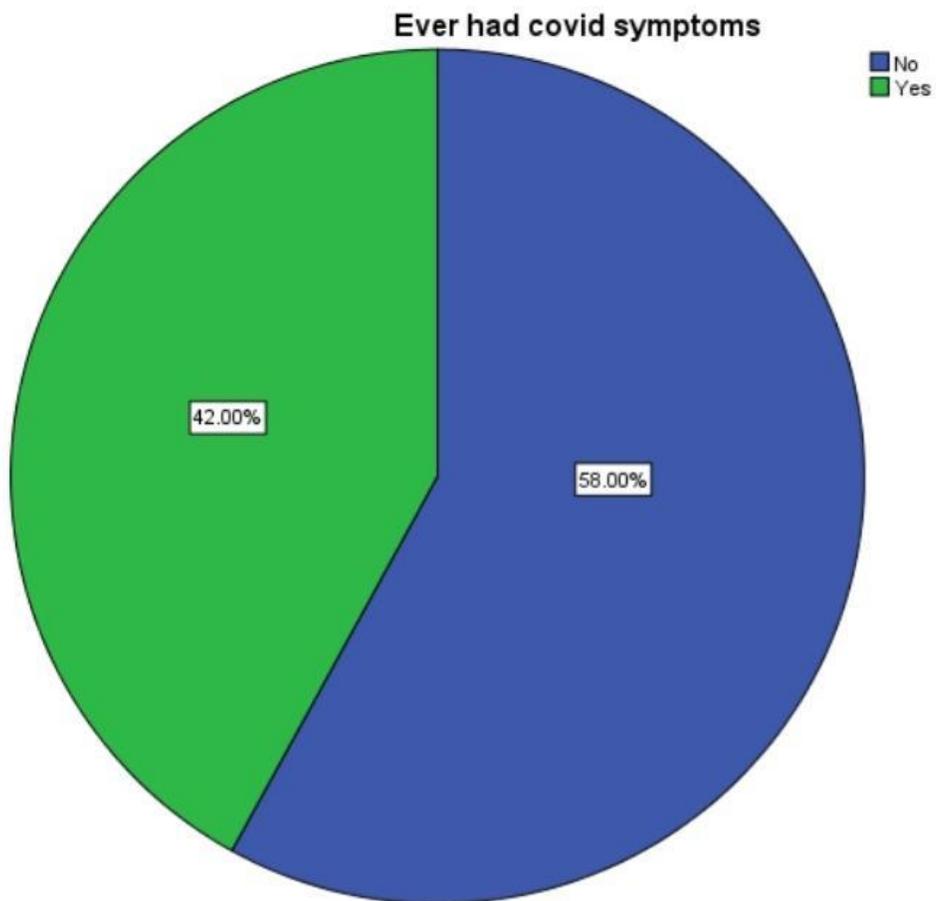


Fig 2:Pie Chart shows the response of the population who had covid symptoms. 42% of the population had covid symptoms. 58% of the population did not have covid symptoms. Green represents yes and blue represents no. Majority of the population responded that they didn't have Covid-19 symptoms.

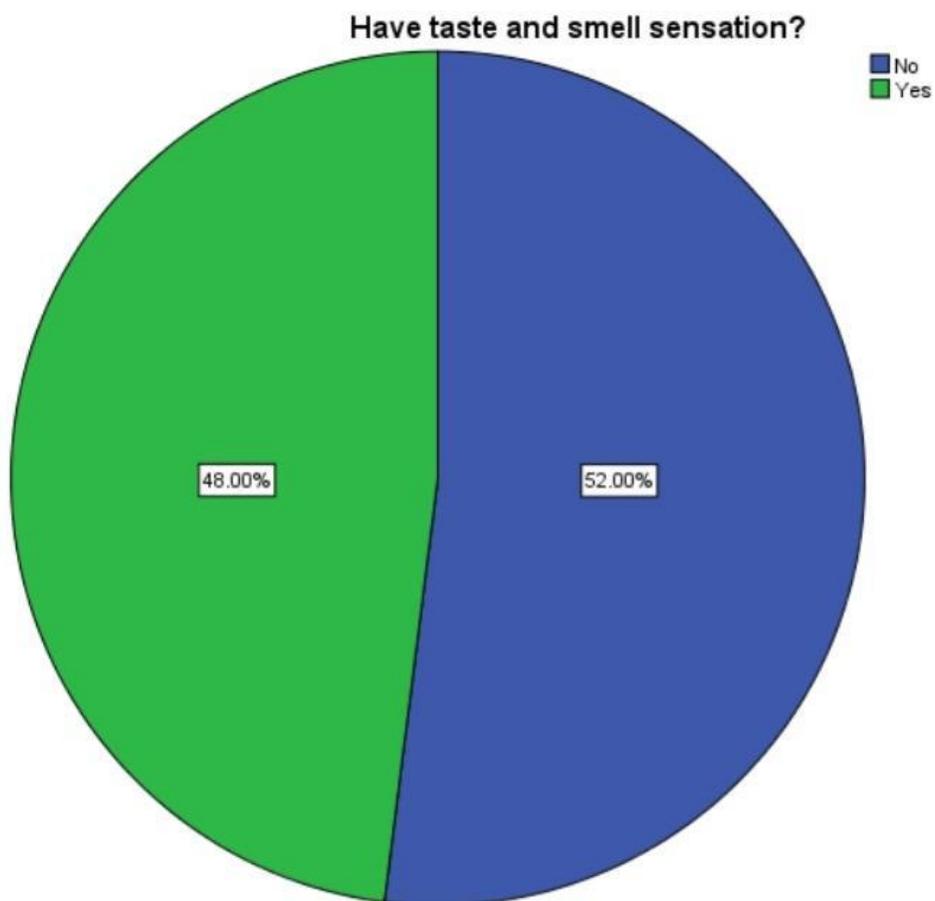


Fig 3: Pie Charts shows the response of the population who had taste and smell sensation properly. 48% of the population had proper smell and taste sensation throughout the lockdown. 52% of the population had changes in taste and smell sensation. Green represents yes and blue represents no. Majority of the population responded that they had some problem with their taste sensation.

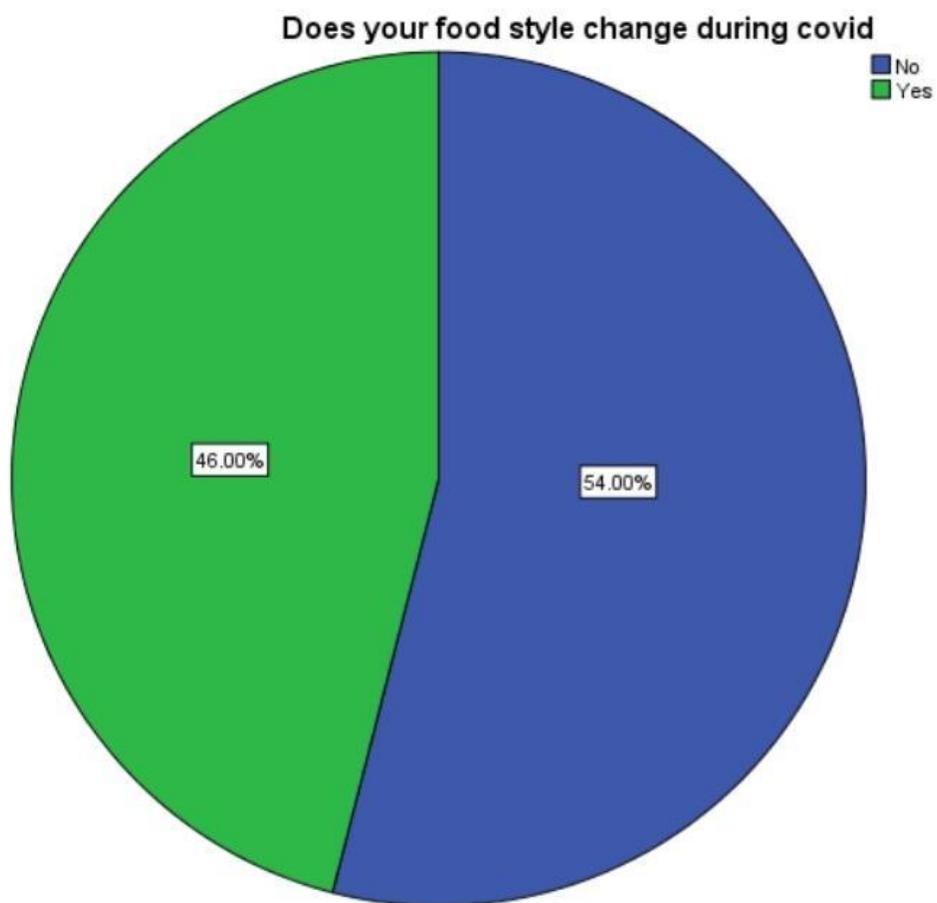


Fig 4:Pie Charts shows the response of the population whose food style had changed. For 46% of the population their food style had changed during lockdown. Whereas for 54% their food style is the same. Green represents yes and blue represents no. Majority of the population responded that they didn't change their food style.

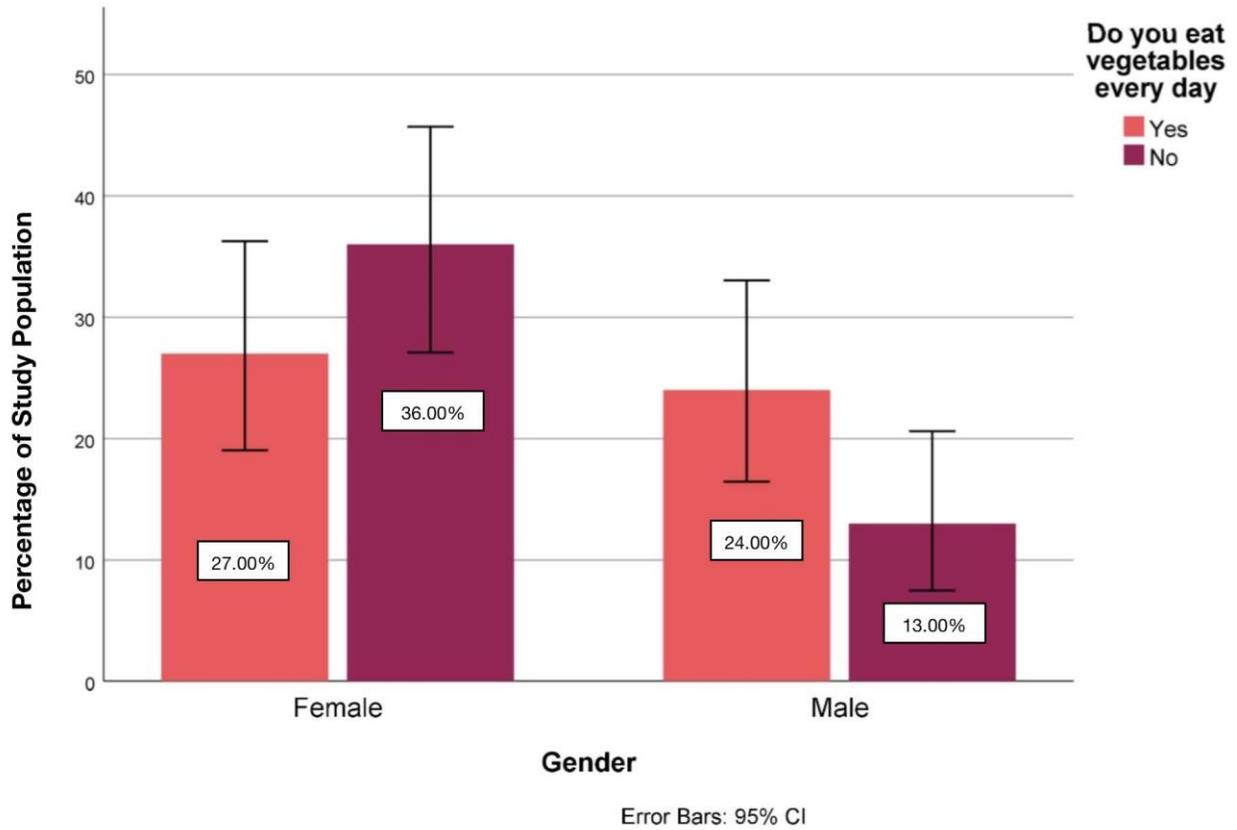


Fig 5: Bar graph showing the association between the gender (X axis) and habit of eating vegetables (Y axis) . 27% of females and 24% of males eat vegetables regularly and 37% of females and 12% of males don't eat vegetables regularly. Majority of the males responded that they eat vegetables regularly during COVID-19. Pearson Chi Square test was done and P value is 0.398 and is statistically not significant ( $p > 0.05$ ).

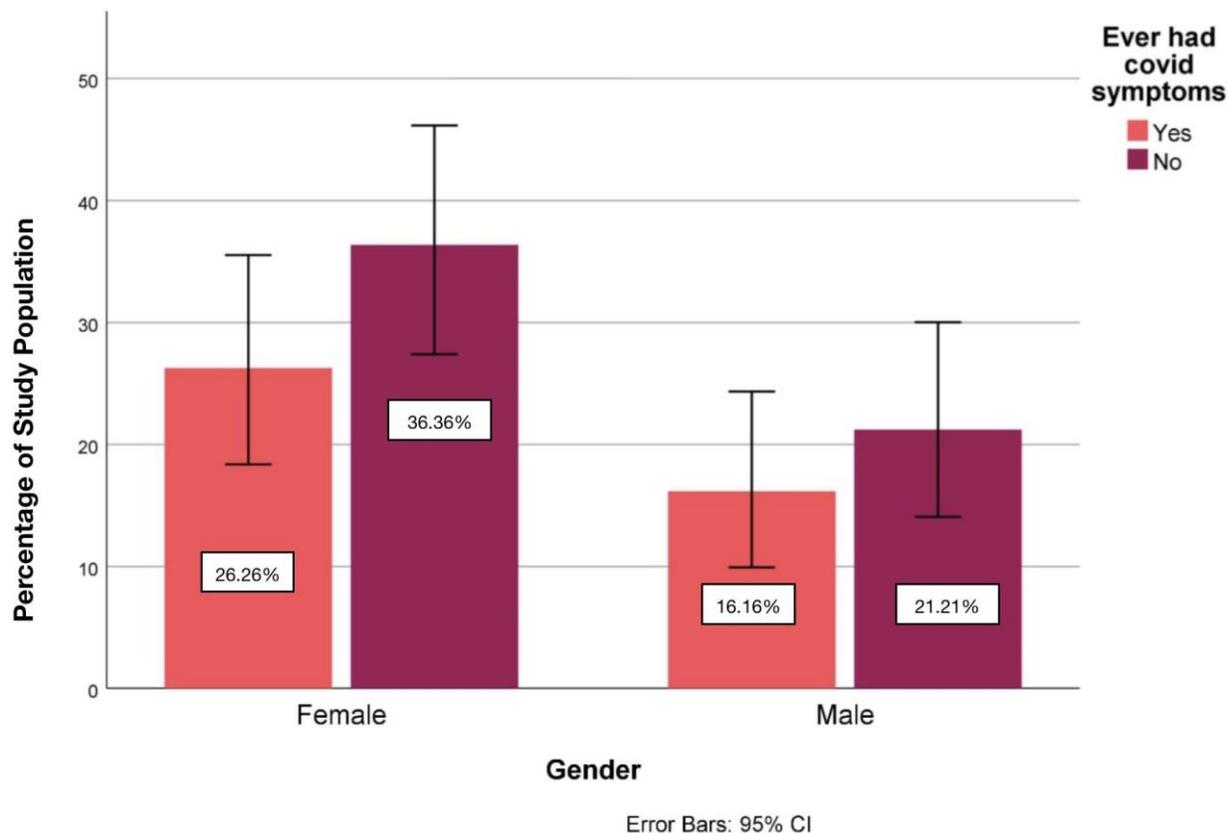


Fig 6: Bar graph showing the association between the gender (X axis) and population who had COVID-19 symptoms (Y axis) . 26% of females and 16% of males had COVID symptoms and 38% of females and 20% of males didn't have any Covid-19 symptoms . Majority of the females believe they had COVID-19 symptoms during COVID-19. Pearson Chi Square test was done and P value is 0.277, statistically not significant( $p > 0.05$ ).

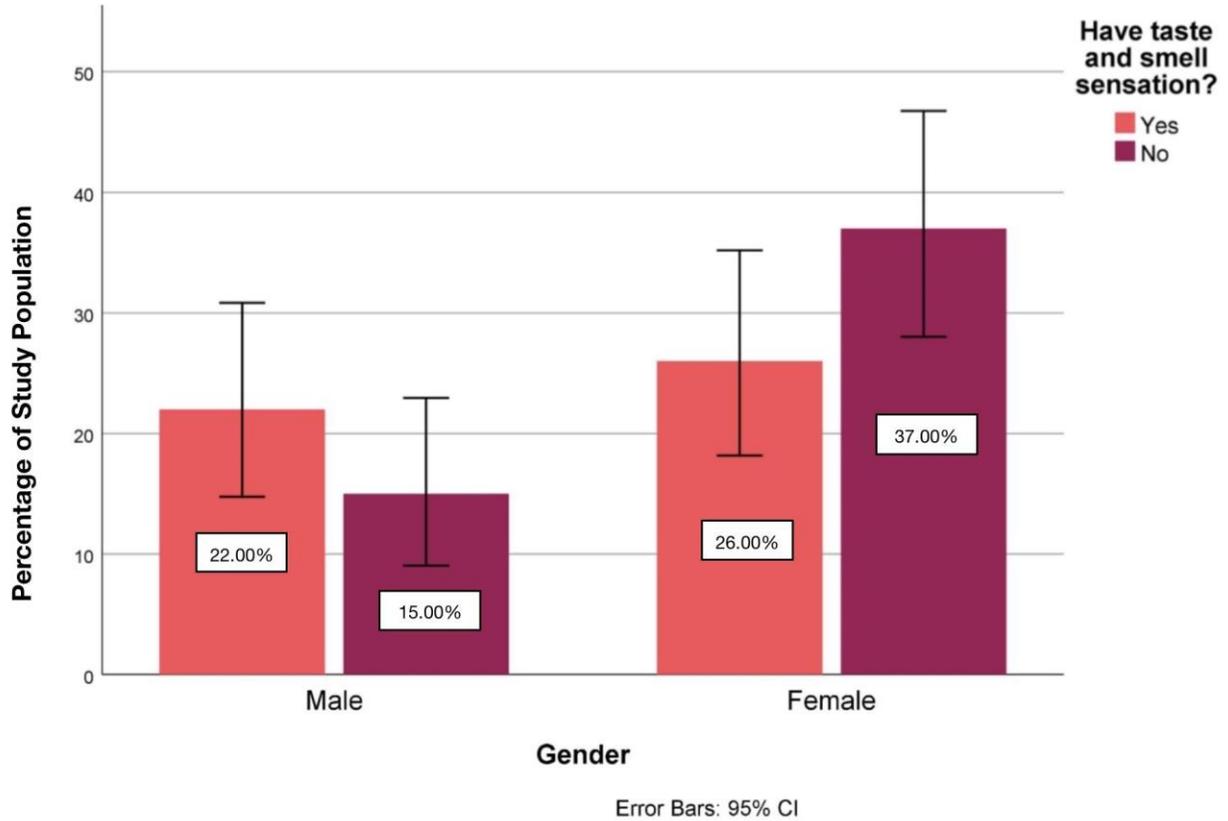


Fig 7:the bar graph represents the association between gender and their taste and smell sensation. In females 37% they don't have taste and smell sensation in 26% they said yes. In males 15% said no and 22% said yes. Green represents yes and blue represents no. Majority of the females believe they didn't have proper taste sensation during COVID-19. This difference is statistically not significant (Pearson chi square test, p value= 0.139(p>0.05)- Not significant.

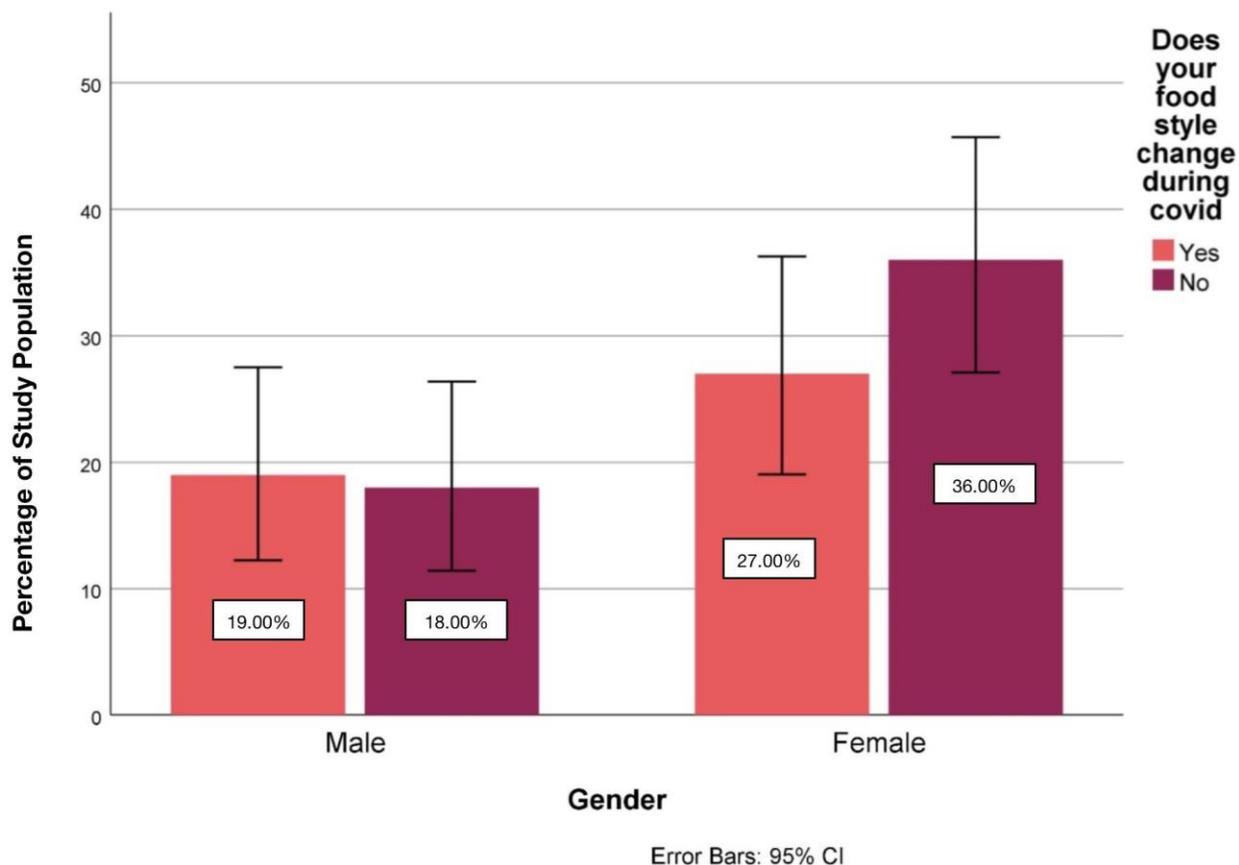


Fig 8 :Bar graph showing the association between the gender (X axis) and food style during COVID (Y axis) . The population (27% of females and 19% of males) changed their food style and 37% of females and 17% of males didn't change their food style. Majority of the females believe they didn't change their food style during COVID-19. This difference is statistically not significant (Pearson chi square test; p value of 0.782 (>0.05)- Not significant)

**Discussion :**

According to the responses we received, the majority of the students had adopted a healthy diet during covid, despite the fact that students did clinical practise. It was more akin to the med diet approach. It is regarded as a nutritious diet plan that mostly consists of olive oil, veggies, and strawberries. Maintaining immunity is critical for covid control(1,(27).Knowing that COVID-19 currently has no effective preventative measures. The importance of healthy and immunity-boosting diet methods cannot be overstated. Vitamins and minerals are present. During the lockdown, more than half of the population's hunger perception, eating habits, and dietary preferences altered. Some people's appetites were suppressed. 40% of the population believes they have gained weight. More than 4% of the population

had quit smoking, and some had cut back (2,10). The study's drawback is that it is a self-reported questionnaire, therefore the possibility of data misreporting is significant.

The study's strength is that it was conducted in a short period of time immediately following the lockdown. It was projected that during the quarantine, there would be a reduction in the intake of fresh foods due to a lack of vitamins and minerals, including vitamin C and vitamin E, as well as beta-carotene, which has antioxidant and anti-inflammatory qualities.(28) Obesity and poor immune responses are linked to a lack of certain micronutrients, rendering patients more sensitive to viral infections. However, throughout the shutdown, Italians focused on Mediterranean food, and as a result, nutritional quality has remained high, particularly in Northern and Central Italy, which also have a lower BMI than Southern Italy. We gathered comments from around 100 dental students so that they are fully informed about their nutrition. Because there aren't many articles about covid diet changes, this one will cover that need. (29)

A range of dietary components, including macro- and micronutrients, vitamins, pH characteristics, and the behaviours associated with their ingestion, are theorised to impact the oral cavity. Furthermore, characteristics like developmental stage, unique medical issues, and socioeconomic situation may imply unique dietary and nutritional considerations. Older people, for example, may exaggerate their symptoms.(30). Populations at increased risk for numerous chronic diseases are comparable to those at increased risk for acquiring oral disorders. Stress, poor nutrition, alcohol and cigarette use, substance abuse, mental health difficulties, domestic violence, and poverty are all common risk factors. Many of these problems have been exacerbated by the epidemic. These and other socioeconomic determinants of health contribute to both exacerbation and deterioration of health. (31).

The limitation of the study is that it is a cross sectional study and it should have been investigated in different periods during the pandemic to get a better understanding of the diet modification on students. Future studies will be encouraged by dividing the students into categories of their standards, this will provide a better understanding of the impact of diet modification on them.

### **Conclusion :**

The study population felt that food modification is highly important in order to increase immunity. Foods like [Citrus fruits], [Red Bell peppers], [Broccoli], [Garlic], [Ginger], [Spinach], [Yogurt] and [Almonds] can be taken to increase immunity. The awareness about food modification should be there

for students and patients as it is an important way to fight COVID-19. And also people should wear masks and follow social distances to fight COVID-19.

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**CONFLICT OF INTEREST:**

The author declares that there was no conflict of interest in the present study.

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