SURVEY ON THE INCIDENCE OF COVID19 AMONG DENTISTS WORKING IN DENTAL HOSPITAL ATTACHED WITH DENTAL COLLEGE

ABSTRACT:

INTRODUCTION:

Covid 19 is primarily a pneumonia associated viral infection that originated from Wuhan city in December 2019.The spread of novel coronavirus occurs through direct close contact with COVID-19 patients within one Metre of the infected person and the rate of spread is enhanced especially if they do not cover their face when coughing or sneezing. The novel virus also spreads by the droplets surviving on surfaces and clothes for many days. The current study focuses on analysing the vulnerability of the dental population to covid19,and the study also deals with analysis of the knowledge among the dentists regarding the diagnosis,prevention and treatment protocols of Covid19.

MATERIALS AND METHOD:

An manual survey was conducted with the self structured questionnaire prepared using google docs. An total of 1000 responses were received.The responses recorded were analysed and statistical analysis was performed

RESULTS:

The current survey results depict that around 97.14% of the participants were exposed to the pandemic outbreak covid19 and among them around 74.23% of the population did not get admitted in hospital and self quarantined themselves and took nutrition rich diet to recover from covid19 infection.

CONCLUSION:

The study results within the limitation depicted that there is adequate awareness,knowledge on all aspects with regards to the pandemic outbreak novel corona virus.study also shows the vulnerability of dentists in any community outbreak of any size.it also shows the disease management strategy handled by the local community.

KEYWORDS: COVID19;SARS-COV2; Awareness;Knowledge.

RUNNING TITLE: awareness about the incidence of covid19 among the dental population.

> **Comment [DS1]:** Were exposed or contacted virus and were affected with covid19

INTRODUCTION:

The most infectious pneumonia associated viral outbreak SARS-COV-2 originated from Wuhan city in China in December 2019. The novel coronavirus was first described in 1966 by Tyrell and Bynoe, by cultivating the viruses from patients with common colds(1)The virus is named 2019- Ncov by the WHO, the international committee on taxonomy of viruses terms it to be SARS-COV-2.The pandemic global outbreak covid19 is a new human infecting betacoronavirus is likely to be originated from the chrysanthemum bats(2).The novel virus SARS- CoV- 2 is found to cause a type of pneumonia associated problem termed Severe Acute Respiratory Syndrome. The virus appears to be spherical and have proteins called spikes protruding from their surface(3). The pandemic outbreak COVID-19 spreads mainly by droplets produced as a result of coughing or sneezing of a COVID-19 infected person. The spread of novel coronavirus occurs through direct close contact with COVID-19 patients within one Metre of the infected person and the rate of spread is enhanced especially if they do not cover their face when coughing or sneezing. The novel virus also spreads by the droplets surviving on surfaces and clothes for many days. Therefore, touching any such infected surface or cloth and then touching one's mouth, nose or eyes can transmit the disease.The Hydroxychloroquine, an old drug used for the treatment of malaria, had demonstrated marked efficacy and it is acceptable globally in treating COVID-19 associated pneumonia (4).

Innate immunity is the inborn capacity of the body to offer resistance to pathogens and toxin products.Innate immunity was first described in 1906 by nobel prize winner ILYA MECHNIKOV(5).Innate immunity is produced by cells of hematopoietic and non-hematopoietic origin.Hematopoietic cells include natural killer cells,macrophage ,neutrophils.Innate immunity is further subdivided into 2 components such as humoral immunity and cell mediated immunity.(6)Humoral immunity is mediated by antibodies where the antibody provides the first line of defence against infections,long-term humoural immunity is mediated by continuous differentiation of B cells.(7)

Immunity is an essential factor to protect ourselves from the infections such as covid19,influenza etc. so in the recent times various studies regarding covid19 origin, prevention methods,correlation of associated topics with coronavirus were conducted and one among them is the research carried out to understand the connect between cancer and the global alarming covid19 condition and the recent studies carried out discovered that people suffering with cancer are more vulnerable to covid19 infection(8,9).However the recent studies also discovered that the aerosol generated in dental procedures reveals that dental profession are at a high risk of developing the viral infection due to enhanced transmission through these large droplets.(10–14), but potentially oral biopsy procedure done in dentistry is effective in detecting covid19 among smokers by the procedure GS17913 and ACE which are found to be receptor for the viral outbreak.(15),also the teledentistry mainly the dental photographs have proved to be a trusted source to

improve the oral health of people to fight against the infection covid19.(16,17). It is also found that the presence of the covid19 infection can be identified from the gingival crevicular fluid.(18–20)(21,22)

In recent times various studies regarding covid19 origin, prevention methods,correlation of associated topics with coronavirus were conducted and one among them is the research carried out to understand the connection between cancer and the global alarming covid19 condition(23–34),
(35–39).   . The recent studies carried out discovered that people suffering with cancer are more vulnerable to covid19 infection(40).The current study focuses on analysing the vulnerability of the dental population to covid19,and the study also deals with analysis of the knowledge among the dentists regarding the diagnosis,prevention and treatment protocols of Covid19.

MATERIALS AND METHOD:

A manual survey was conducted with a self structured questionnaire among dentists with a sample size of 1000 . The questionnaire was designed using the online platform "google docs" and the questionnaire was circulated and responses were collected. The questionnaire consists of 2 parts,first part contains questions related to socioeconomic data, questions related to the COVID19 and about the available treatment modalities and the second part of the questionnaire comprise questions related to recovery rate and consequences of COVID19 infection. The questionnaire was validated in the usual manner. Measures such as the selection of participants randomly, steps to prevent asking irrelevant questions to the participants, placing restrictions over participant population and age groups are taken to minimise the bias occurring in sampling,with the   collected data a descriptive analysis test was performed using the software "SPSS VERSION 20" and the findings of the present study was displayed in the form of pie charts.

> **Comment [DS2]:** How was the sample size calculated and what was the sampling technique used??

> **Comment [DS3]:** What would you consider as irrelevant??
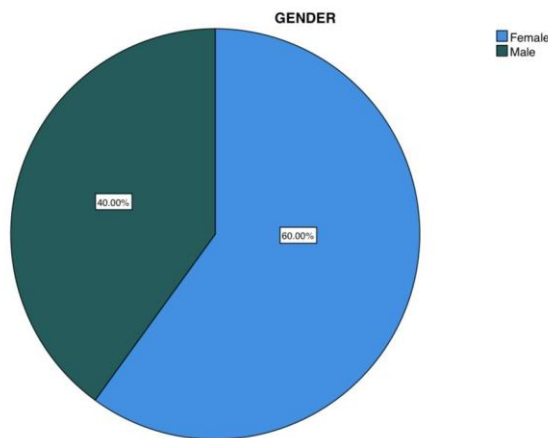
RESULTS:

Figure 1: This   pie chart depicts the ratio of male and female population in the total survey population,60% of the participants were female(blue) and around 40% were male(green).
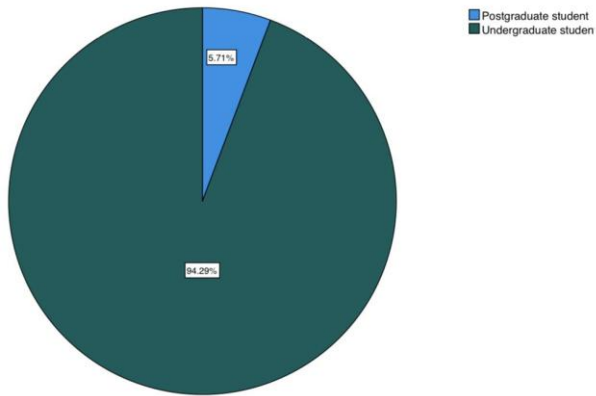
Postgraduate student
Undergraduate studen

5.71%

94.29%

Figure 2: The pie chart depicts the ratio of undergraduate and postgraduate participants in the overall population, 94.29% of the participants were from undergraduate students (green),5,71% of the participants were from post graduate (blue).
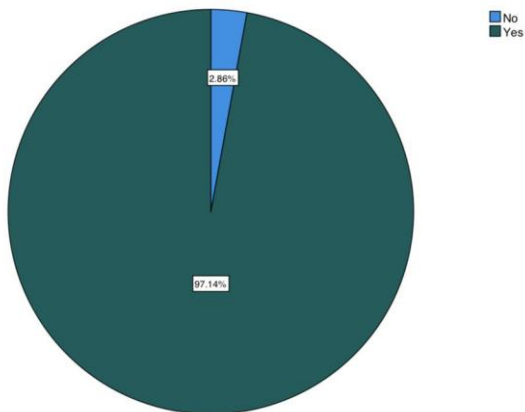

No
Yes

2.86%

97.14%

Figure 3: pie chart shows the ratio of participants affected/exposed with covid19 in the overall population,97.14% responded that they are exposed to the pandemic outbreak covid19 (green),2.86% are not exposed to covid19(blue).

Comment [DS4]: What does exposed with COVID 19 mean?? Is it came in contact with patients with COVID or they were tested COVID positive??
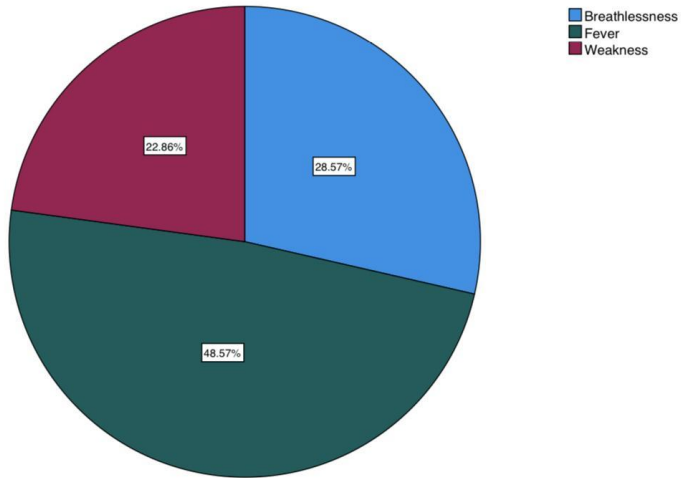
Figure 4: The pie chart depict the various symptoms associated with covid19,48.57% of the participants had fever as a symptom at the initial stage(green),around 28.57% of the respondents had breathlessness(blue) and the remaining 22.86% had weakness(pink).
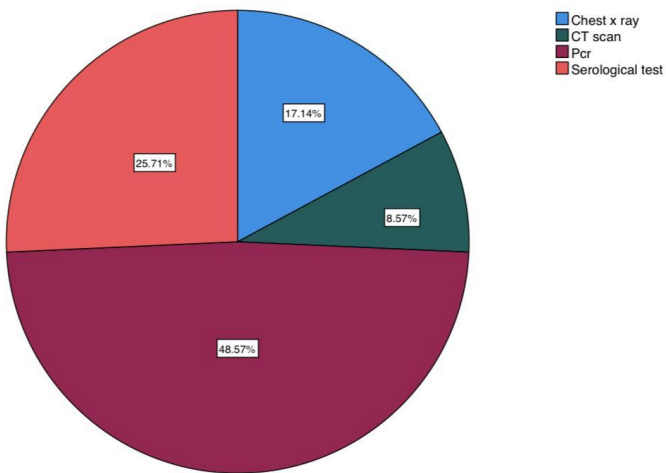
Figure 5: The pie chart shows the various diagnostic method of covid19,48.57% of the participants were diagnosed using PCR(pink),25.71% were diagnosed with serological test(orange),around 17.14% were diagnosed with the help of chest X ray(blue) and the remaining with CT scan(green).
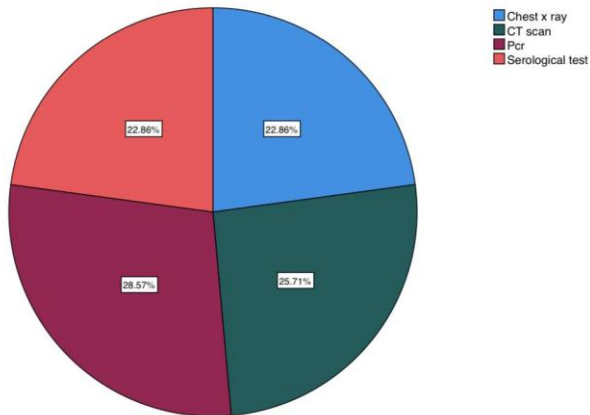

FIGURE 6: The pie chart depicts the reliability of various diagnostic methods of covid19, 28.57% of the people answered PCR to be the reliable method(blue),25.71 of the participants believe CT scan to be the reliable method(green),and the remaining people believe other methods like chest x ray, serological test to be reliable(orange,blue).
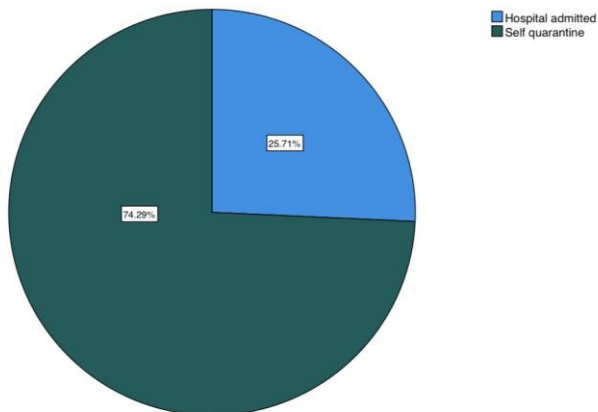

FIGURE 7: The pie chart depicts the ratio of incidence of hospital admitted participants in the population,74.23% of the population did not get admitted in hospital(green) and around 25.71% got admitted in the hospital(blue).
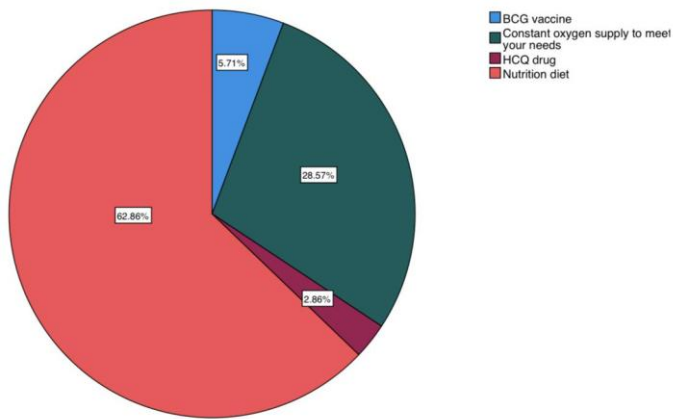
FIGURE 8: The pie chart shows the Various treatment modalities available for covid19,62.8% were given only proper nutritional diet(orange)and 5.71% of BCG vaccine(blue),28.7% of constant oxygen(green) and around 2.88% were given HCQ drug(pink).
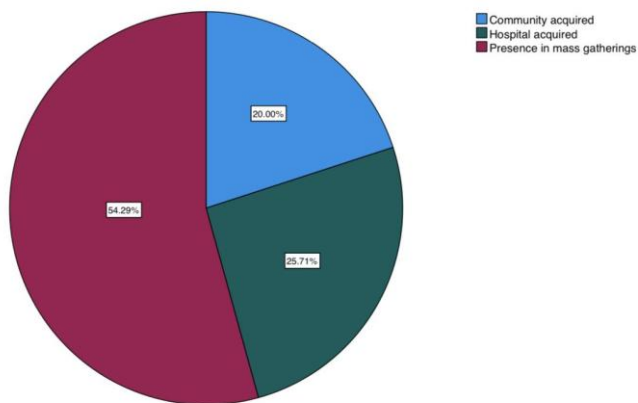
FIGURE 9: The pie chart depict the various source of Covid19 infection,54.28% of the participants got affected because of attending a mass gathering(pink),25.71% of the participants got exposed through their contact with hospital(green)
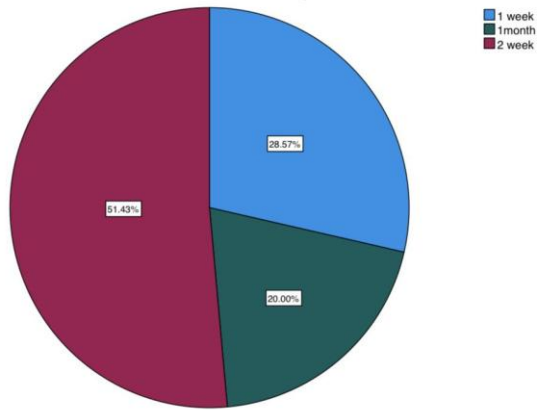
FIGURE 10: The pie chart depicts the recovery rate from covid19,51.43% of the participants answered that they recovered within 2weeks(pink),28.57% of the people answered that they think the recovery rate from covid19 is 1 week(blue).
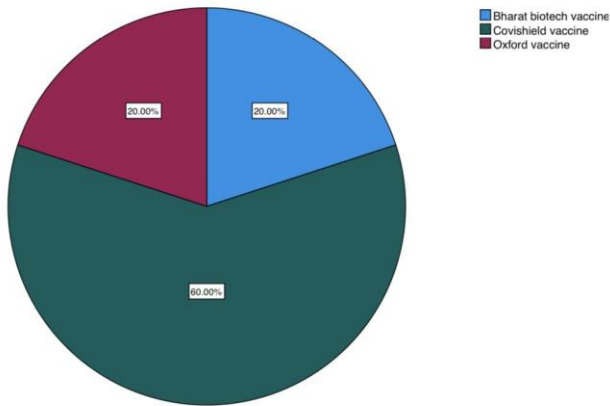
FIGURE 11 : The pie chart shows the various available vaccine for preventing covid19.60% of the participants prefer COVISHIELD(green),20% of the participants prefer BHARAT BIOTECH VACCINE(blue)and 20% of the participants prefer OXFORD VACCINE(pink)
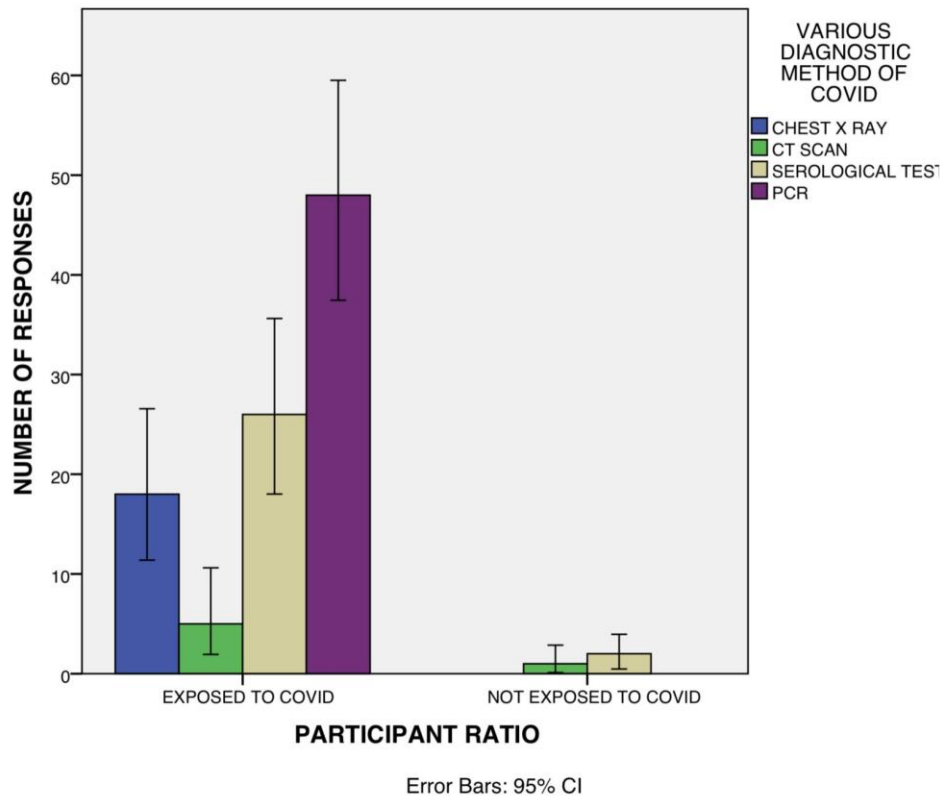
Error Bars: 95% CI

FIGURE 12: Bar graph representing the association by chi square test between participant ratio and the various diagnostic methods of covid. X axis represents the participant ratio and Y axis represents the frequency of responses.Blue colour denotes the people who think chest X ray as a diagnostic tool and green colour denotes the people preferring CT scan as a diagnostic tool, yellow determine ratio of people preferring serological tests and purple denotes people who believe PCR to be a diagnostic tool. P value=0.012,p value>0.05 hence statistically significant.

In the current study the Figure 1 depicts that the number of male and female population ratio in the overall survey population was in the percentage 40% males and 60% females.Figure 2 depicts that the number of undergraduate students and postgraduate students population ratio in the overall survey population was in the percentage 94.29% undergraduate students and remaining were post graduate students.The Figure 3 in the current study depicts about the ratio of participants affected/exposed with covid19 in the overall population,97.14% responded that they are exposed to the pandemic outbreak covid19,2.86% are not exposed to covid19.Figure 4 depict the various symptoms associated with covid19,48.57% of the participants had fever as a symptom at the initial stage, around 28.57% of the respondents had breathlessness and the remaining 22.86% had weakness.Figure 5 shows the various

diagnostic method of covid19,48.57% of the participants were diagnosed using PCR,25.71% were diagnosed with serological test,around 17.14% were diagnosed with the help of chest X ray and the remaining with CT scan.The Figure 6 denotes the reliability of various diagnostic methods of covid19, 28.57% of the people answered PCR to be the reliable method,25.71 of the participants believe CT scan to be the reliable method,and the remaining people believe other methods like chest x ray, serological test to be reliable.The results recorded for Figure 7 in the study depicts the ratio of incidence of hospital admitted participants in the population,74.23% of the population did not get admitted in hospital and around 25.71% got admitted in the hospital.Figure 8 of the study shows the Various treatment modalities available for covid19,62.8% were given only proper nutritional diet and 5.71% of BCG vaccine,28.7% of constant oxygen.Figure 9 depicts various source of Covid19 infection,54.28% of the participants got affected because of attending a mass gathering,25.71% of the participants got exposed through their contact with hospital.Figure 10 depicts the depicts the recovery rate from covid19,51.43% of the participants answered that they recovered within 2weeks,28.57% of the people answered that they think the recovery rate from covid19 is 1 week.Figure 11 shows the various available vaccine for preventing covid19.60% of the participants prefer COVISHIELD,20% of the participants prefer BHARAT BIOTECH VACCINE and 20% of the participants prefer OXFORD VACCINE.Figure 12 representing the association by chi square test between participant ratio and the various diagnostic methods of covid.

> **Comment [DS9]:** The findings of the graphs are repeated in the written results.

DISCUSSION:

In the previous study performed to analyse the inhibition properties of plants and proved that plants posses inhibition property to a certain extent based on the affinity of turmeric, neem, ashwagandha and ginger to be potential inhibitors for covid19(41)(42). The findings of the previous study match with the findings of fig 8 in the present study.

> **Comment [DS10]:** Which findings are similar??

The results of figure 6 depicts the CT scan has a high degree of reliability among the various available diagnostic methods of covid19,when compared with the study conducted on analysing the efficiency of CT scan and PCR found that they were patients Typical CT findings was associated with negative rRT-PCR results, the study concluded that CT SCAN posses 97.2% reliability than rRT-PCR, the finding of both the study are similar(43,44).

The findings of fig8 depict that around 5.71% of the people believe BCG vaccine has role in preventing Covid19 infections,when compared with previous study findings it revealed that BCG vaccination also acted as one of the trusted prevention methods to prevent healthcare workers against COVID19 infection in the initial period of pandemic situations(45,46).

So, the possible factors for the high incidence rate of Covid19 Pandemic outbreak on dental populations is specifically demonstrated in the current study.The present study possesses limitations such as the small sample size, homogeneous population and the study deals only with one particular parameter. Further studies with a large sample size, focus on detail concerned with many parameters should be done to significantly demonstrate the merits,demerits and benefits of sterilization procedure against Covid19.

CONCLUSION:

The study results within the limitation depicted that there is adequate awareness,knowledge on all aspects with regards to the pandemic outbreak novel corona virus.study also shows the vulnerability of dentists in any community outbreak of any size. It also shows the disease management strategy handled by the local community. The impact of the pandemic in a community depends on the overall strategy and the management by the government agencies at all levels. The impact is said to be an indication of the poor political decision and delay in the initiation of the control measures. It had a significant penetration in the community before the lockdown

Comment [DS11]: There are no results depicting this conclusion.

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Comment [DS12]: Many of the references are not relevant. Use only relevant references.

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