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Awareness and perception of precautionary measures against Covid 19 exposure among dental practitioners- A questionnaire based study

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ABSTRACT

The most unexpected pandemic global outbreak is COVID 19 which is a newly discovered viral infection which originated in Wuhan, China and it caused the outbreak of pneumonia in the rest of the world. Dental practitioners are more susceptible to COVID 19 infection as their work is related to the aerosol formation during various procedures through which the virus spreads. The aim of the study is to create awareness about precautionary measures against COVID-19 exposure among dental practitioners in Tamilnadu. A Survey based questionnaire was formulated with questions related to the various precautionary measures to be adopted by dental practitioners which would be effective to prevent Covid-19 exposure. A questionnaire with a total of 20 questions was circulated among dental practitioners and the responses were collected by google forms SPSS software statistical analysis was done. The overall awareness of dental practitioners against Covid-19 was above average. The dental practitioners were relatively well aware of the precautions to be adopted while treating the patients, but the implementation in practice is lacking due absence of hands-on experience in using various kinds of PPE. There is a gap between knowledge and attitude and practice among the participants of this survey. It is therefore essential to plan for organising training sessions and hands-on workshops for the use of PPE and public training of the general population regarding Covid-19 to improve the knowledge among the patients visiting the dental clinic as well.

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INTRODUCTION

The most unexpected pandemic global outbreak is Covid 19, a newly discovered viral infection which originated in Wuhan China and it caused the outbreak of pneumonia in rest of the world (Du *et al.*, 2020). The novel virus SARS-COV-2 is a pneumonia associated problem termed severe acute respiratory syndrome. It is transmitted through airborne droplets, contact or touch an infected person or a contaminated surface (Du *et al.*, 2020). The virus appears to be spherical and have proteins called spike protruding from their surfaces. Dental practitioners are more susceptible to COVID 19 infection as their work is related to the aerosol forma-

tion during various procedures through which the virus spreads (Baseer *et al.*, 2016). Transmission of Blood or saliva increases concern about a similar route of transmission of COVID 19 in dental settings. Despite availability of prevention and recommendations on infection control, many dental practices lack minimum requirements of infection control due to medical negligence (Uma *et al.*, 2018). Precautionary measures patients' entrance into the practice, dental treatment, and after-treatment management are reported and discussed. COVID-19 is a major emergency worldwide, which should not be underestimated (Izzetti *et al.*, 2020). Due to the rapidly evolving situation, further assessment of the implications of COVID-19 outbreak in dental practice is needed. Many oral diseases which are commonly seen are cancer, periodontal disease etc which may also require treatment with judicious use of discretion and empathy among dental practitioners (Shree, 2019; Prasanna and Gheena, 2016).

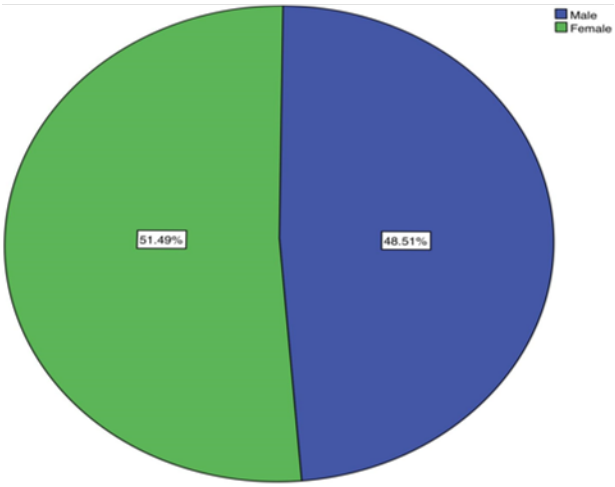

Figure 1: Pie chart representing the percentage distribution of gender of the respondents

The World Health Organization declared the pandemic diffusion of COVID-19, and restrictive measures to limit contagion have been taken in several countries (Peng, 2020). The virus has a predominantly respiratory transmission through aerosol and droplets (Ruiz-Contreras, 2003). The importance of infection control is therefore crucial in limiting the effects of virus diffusion. During dental treatment a huge number of medical staff are reported to acquire disease during working with infected individuals. Dental clinic is not an exception for transmitting and acquiring infection between staff or individuals, but dental clinic could be riskier environment of spreading virus because close contact with patients and nature of the dental treatment.

(Baseer *et al.*, 2016) Dental surgeons may also be involved in surgical procedures and handling

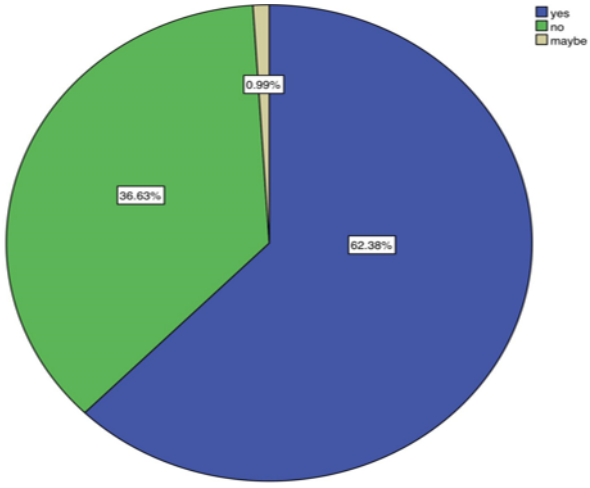

Figure 2: Majority of the participants 62.38% answered yes denoted (blue) and 36.63% answered no denoted (green) and 0.99% answered may be denoted (brown)

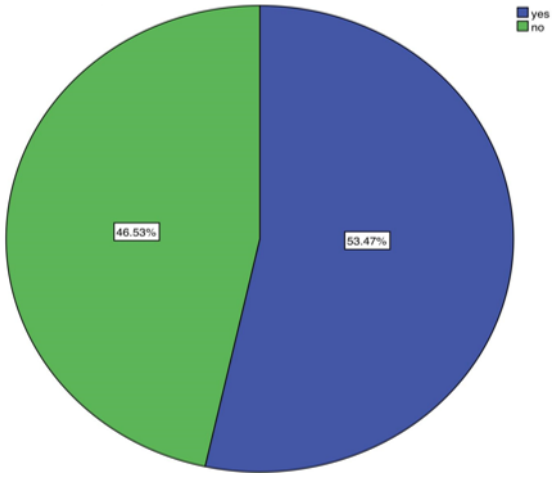

Figure 3: Majority of the participants 53.47% answered yes denoted (blue) and 46.53% answered no denoted (green)

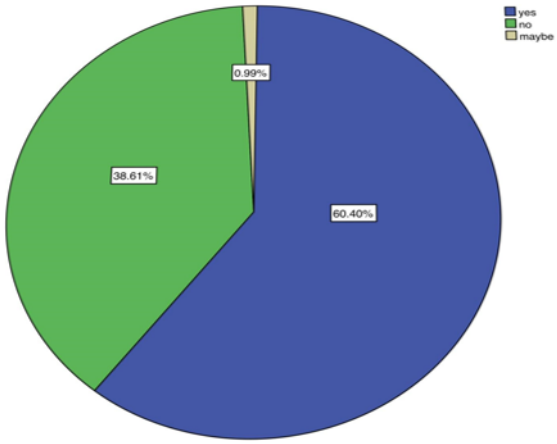

Figure 4: Majority of the participants 69.49% answered yes denoted (blue) and 36.61% answered no denoted (green) and 0.99% answered may be denoted (brown)

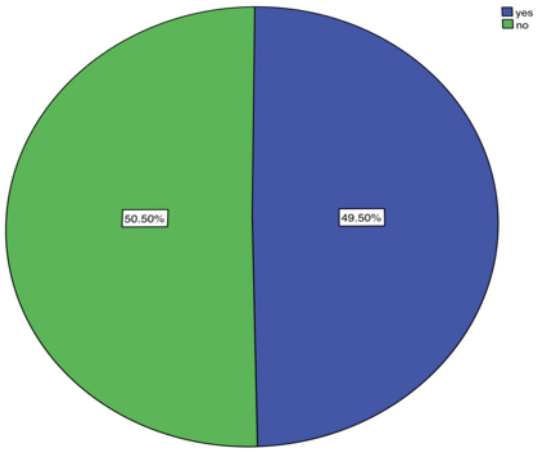

Figure 5: Prevents the spread of diseases majority of the participants 50.50% answered no denoted (green) and 49.50% answered yes denoted (blue)

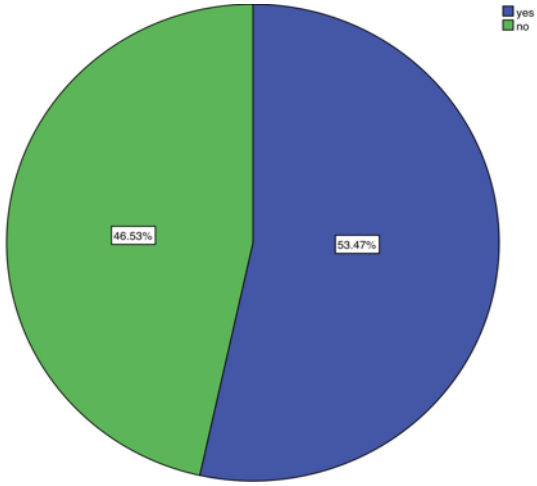

Figure 8: Majority of the participants 53.47% answered yes denoted (blue) and 46.53% answered no denoted (green)

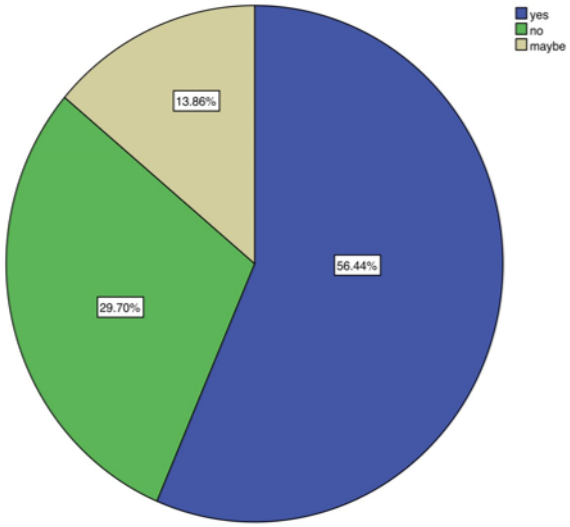

Figure 6: Majority of the participants 56.44% answered yes denoted (blue) and 29.70% answered no denoted (green) and 13.86% answered maybe denoted (brown)

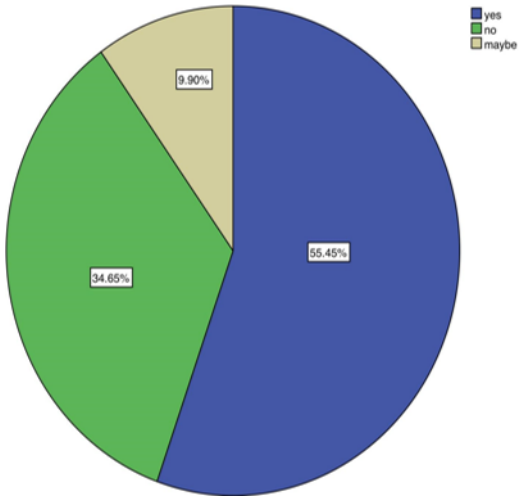

Figure 9: Majority of the participants 55.45% answered yes denoted (blue) and 34.65% answered no denoted (green) and 9.90% answered maybe denoted (brown)

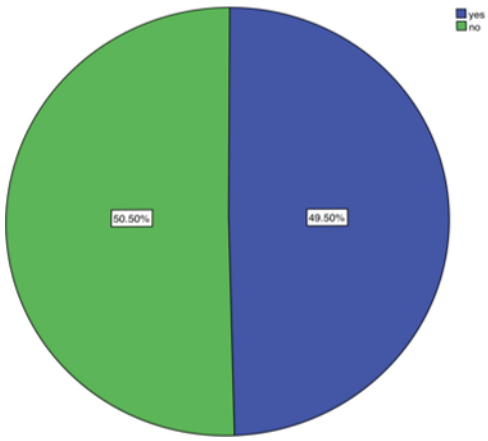

Figure 7: Regulating people with proper health habits prevents the viral spread

of specimen, hence precaution and knowledge is required to prevent infections from those sources as well (Krishnan, 2018). Patients diagnosed with COVID 19 can be treated for dental emergencies. Therefore, the patients infected with COVID 19 without showing symptoms are a great threat to dentists and other members of the dental team. Patients reporting with minor symptoms like tooth hypersensitivity, enamel hypoplasia, gingival pigmentation (Gunasekaran and Abilasha, 2016; Manohar and Abilasha, 2019; Sukumaran and Padavala, 2018) can be attended to with just medications without interventions. We aim to discuss the risks related to dental practice and current recommendations for dental practitioners. (Dziedzic and Wojtyczka, 2020). Dental practitioners must take precautions without exception towards patients with hepatitis

B, hepatitis C or human immunodeficiency virus to limit the rate of infection (Hon *et al.*, 2008). Prospective studies have shown that pre-cutaneous exposure has an estimated risk of about 0.3%, 6 to 30% and 1.8% for HIV, hepatitis B and hepatitis C. Even climatic changes can cause alteration in the microbial infections spread and occurrence (Sarbeen and Gheena, 2016).

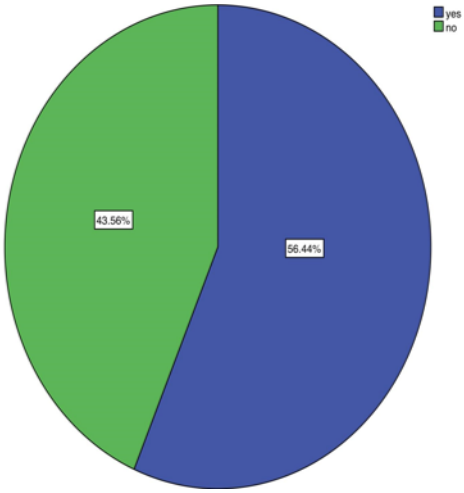

Figure 10: Antibiotics are effective in preventing and treating the corona virus

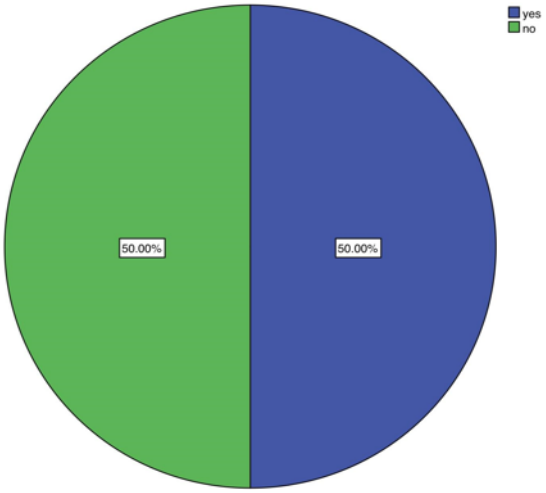

Figure 11: Majority of the participants 50% answered yes denoted (blue) and 50% answered no denoted (green)

Many awareness studies and surveys have been performed in dental students (Palati *et al.*, 2020; Hannah *et al.*, 2018; Ahad and Gheena, 2016; Palati *et al.*, 2019; Abitha and Santhanam, 2019; Harrita and Santhanam, 2019) but none of the studies have focussed on the knowledge and awareness of dental practitioners in various aspects. Patients Guidelines to be followed by dentists and dental treatment staff according to ADA(American Dental Association) and WHO include Personal Protective Equipment like hand wash, patient evaluation, rubber dam isolation, mouth rinsing before dental procedures and disinfection of clinic. This study is aimed to assess the awareness and perception about precautionary measures against COVID 19 exposure among dental practitioners.

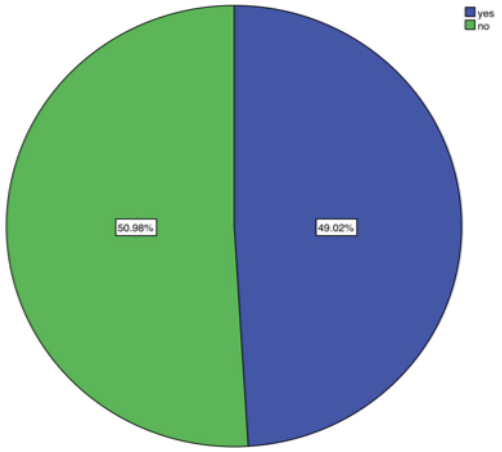

Figure 12: Majority of the participants 49.02% answered yes denoted (blue) and 50.98% answered no denoted (green)

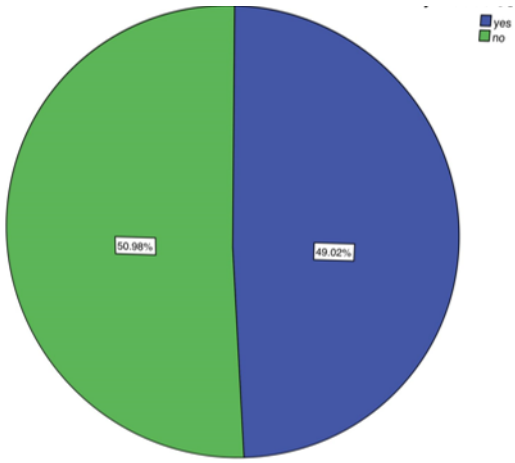

Figure 13: Spraying alcohol or chlorine all over the body kills the corona virus

MATERIALS AND METHODS

An online survey was conducted with a self prepared questionnaire with a sample size of 100 participants consisting of dental practitioners who work in private clinics and hospitals. The questionnaire consists of questions that help in connecting socio economic data, questions helps to create awareness among participants and questionnaires also comprised of questions related to facts about precautionary measures adopted by the dental practitioners. Participants were given a short introduction about the need to study the causes COVID 19 exposure. The Questionnaire comprised a series of ques-

tions about dentists and awareness of COVID 19 precautionary measures and attitude towards treating patients with COVID 19 are taken to minimize the bias acquired in sampling. The questionnaire was circulated using the online platform. Data analysis was carried out using statistical software " SPSS software version 20". The results of the survey were represented in the form of graphs.

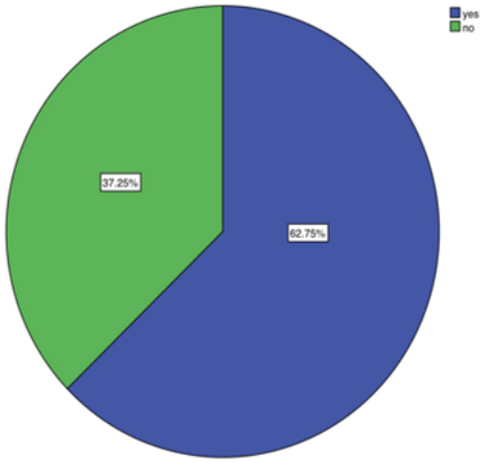

Figure 14: Closing of the windows and doors are the reason for the spreading COVID 19

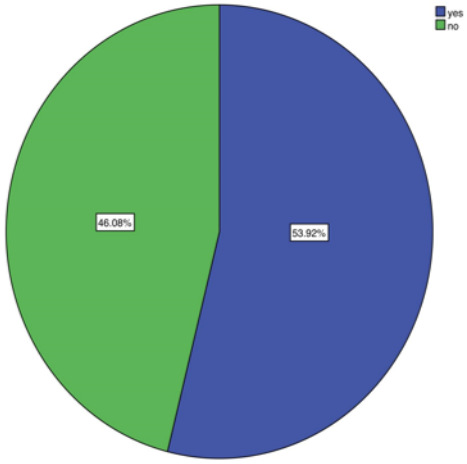

Figure 15: Majority of the participants 53.92% answered yes denoted (blue) and 46.08% answered no denoted (green)

RESULTS AND DISCUSSION

Results were tabulated as pie-charts (Figures 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15). Overall awareness about precautionary measures against COVID 19 exposure among dental practitioners was good. This survey was conducted to create awareness among dental practitioners and also assess their perception of the precautions to be carried out during the covid-19 pandemic. Majority of the responders were aware about precautionary measures taken against COVID 19. 53% agreed that this lock down prevents the spread of COVID 19. 77% accepted that the use of hand sanitizers and face masks is an effective precautionary measure against COVID 19. Most studies advised to protect oneself and others from infection by washing hands or using an alcohol based rub frequently and not touching one's face. In this study, approximately, 60%agreed that use of face mask and hand sanitizers prevents the spread of the diseases while compared to previous study in which 75% were aware of use of face mask and hand sanitizers prevented the disease from spreading (Khader *et al.*, 2020). Precautions also needed to be followed during biopsy procedures (Sheriff and Santhanam, 2018). 70% of participants agreed to stay home even mild symptoms of COVID 19 while comparing to previous study where 95.8% agreed to stay home even mild symptoms of COVID 19 and 0.2% disagreed (Khader *et al.*, 2020).

Figure 1 depicts, Majority of the participants 51.49% were females denoted (green) and 48.51% were males denoted (blue).

Figure 7 shows, Majority of the participants 50.50% answered no denoted (green) and 49.50% answered yes denoted (blue).

Figure 10 represents, Majority of the participants 56.44% answered yes denoted (blue) and 43.56% answered no denoted (green).

Figure 13 shows, Majority of the participants 49.02% answered yes denoted (blue) and 50.98% answered no denoted (green).

Figure 14 depicts, Majority of the participants 67.25% answered yes denoted (blue) and 37.25% answered no denoted (green).

Figure 16 represents, Blue denotes yes, green denotes no. Males and females are aware about the precautionary measures taken against COVID 19. Pearson's Chi Square test shows p value is 0.636 (>0.05). Hence it is not statistically significant.

Figure 17 shows, Blue denotes yes, green denotes no. Males and females are aware that the usage of sterilized clothing by doctors prevents the spread of diseases.

Figure 18 represents, Blue denotes yes, green denotes no. Males and females are aware whether this lockdown prevents the spread of COVID 19.

Figure 19 represents, Blue denotes yes, green denotes no. Males and females are aware whether improving social distancing habits is an effective measure to prevent.

Figure 20 shows, Blue denotes yes, green denotes

no. Males and females are aware whether the use of Hand sanitizer and face mask.

Figure 21 depicts, Blue denotes yes, green denotes no. Males and females are aware whether regulating people with proper health habits.

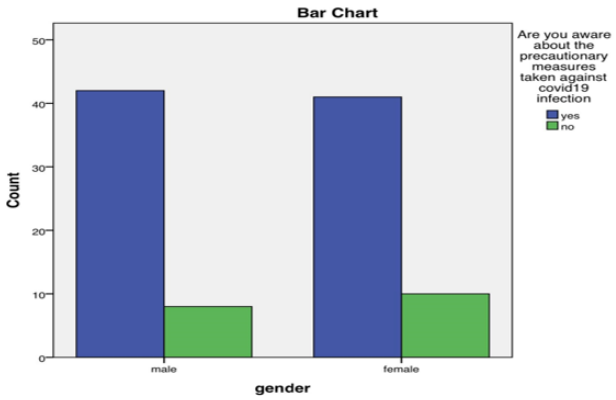

Figure 16: X axis represents the gender and Y axis represents the number of responses

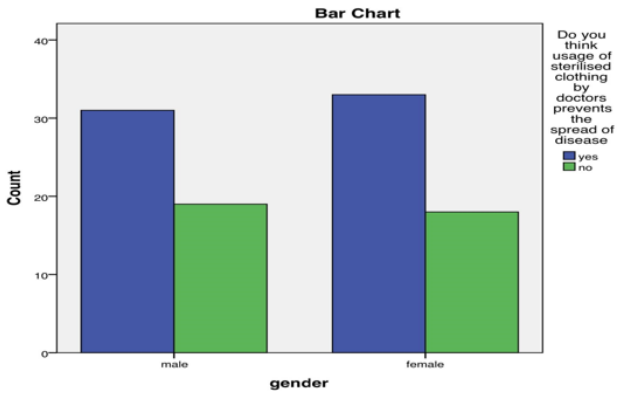

Figure 17: X axis represents the gender and Y axis represents the number of responses

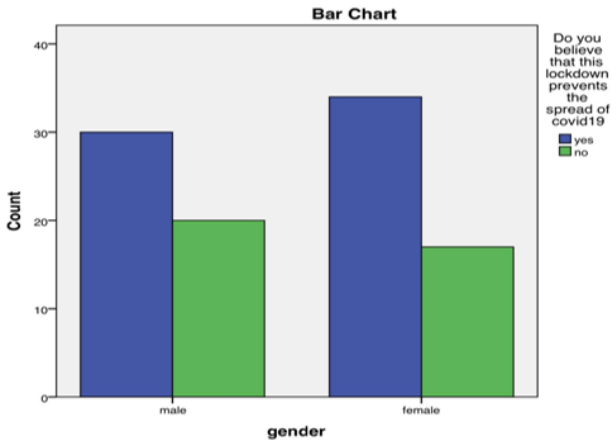

Figure 18: X axis represents the gender and Y axis represents the number of responses

A correlation analysis was done between gender and other parameters in the study, using chi square test and was depicted in the form of bar charts (Figures 16, 17, 18, 19, 20 and 21), $p<0.05$ was considered to be statistically significant.

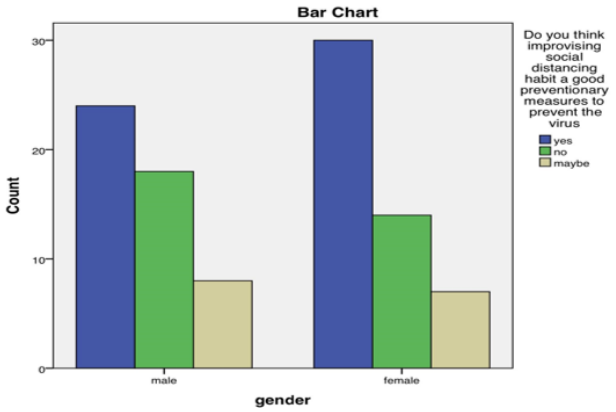

Figure 19: X axis represents the gender and Y axis represents the number of responses

More than 60% of dental practitioners agreed that using sterilized clothing by doctors prevents the spread of diseases COVID 19 while comparing to previous study 70% agreed that the use sterilized clothing by doctors prevents the spread diseases COVID 19 and 30% disagreed (Meng *et al.*, 2020) 68% of participants agreed that use of antibiotics was effective preventing and treating coronavirus while comparing to previous study where the percentage was 75%. (Wu *et al.*, 2020). In the present study 66% agreed that closing windows and doors are reasons for spreading COVID 19 while compared to previous study 70% agreed (Du *et al.*, 2020). Due to the unique characteristics of dental procedures where a large number of droplets and aerosols could be generated, the standard protective measures (Lauer, 2020) alone may not be sufficient to protect ourselves. In daily clinical work they are not effective enough to prevent the spread of COVID-19, especially when patients are in the incubation period. (Baseer *et al.*, 2016). The majority of dental practitioners 97.8% agreed that dentists have a good understanding about the importance to educate others about COVID 19 to prevent the spread of the diseases. The limitations in the present study is that there was a lesser study population among dental practitioners. The future scope awareness knowledge limitations of dental practitioners explored sorted out of COVID 19.

In this study, some dental practitioners believe PPE is not necessary as it is too heavy and will be uncomfortable to wear for a long time. It also prohibited comfortable breathing and communicating, caused skin irritation and put pressure on the body (Akbar-Khanzadeh and Merrill, 1998). Maintaining hygiene among dental practitioners is very important while wearing safety equipment (Ranney *et al.*, 2020).

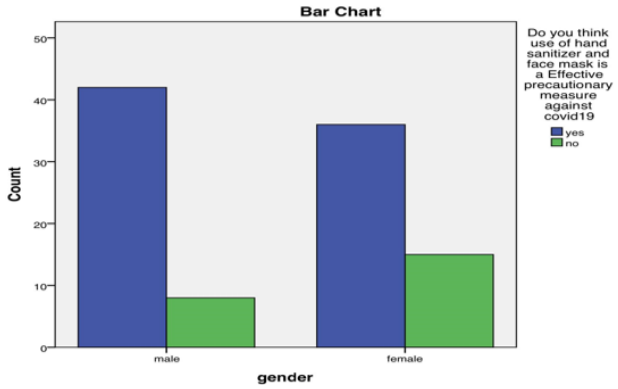

Figure 20: X axis represents the gender and Y axis represents the number of responses

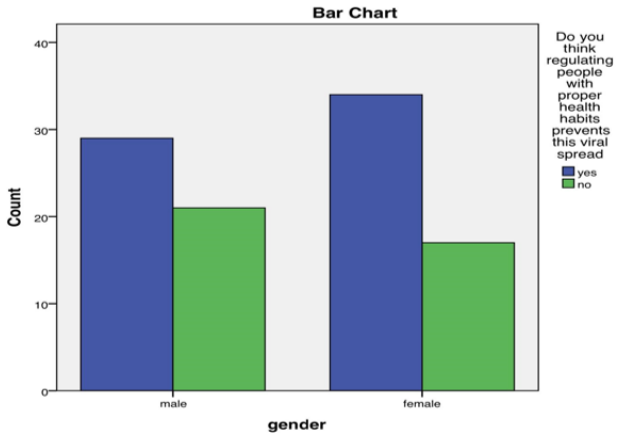

Figure 21: X axis represents the gender and Y axis represents the number of responses

CONCLUSION

Dental practitioners were aware of the most of the precautionary measures to be adopted in a dental clinic. Dentists had limited comprehension of extra precautionary measures to protect dental staff and other patients from COVID 19. Practical guidelines have been put forth recommended by some institutions like ADA to all registered dentists during COVID 19 Pandemic, to make dentists aware of the best practices and disease management and various approaches to offer prompt and safe treatment.

Conflict of Interest

None.

Funding Support

None.

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