Knowledge and Awareness of Existing Potential Treatment Approaches for COVID-19 Among Dental Students

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ABSTRACT

Introduction: Coronaviruses are important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, resulting in an epidemic throughout China, followed by an increasing number of cases in other countries throughout the world. The virus that causes COVID-19 is designated severe acute respiratory syndrome. Coronavirus 2 (SARS-CoV-2); previously, it was referred to as nCoV-2019.

Aim: The aim of the study is to assess the awareness of existing potential treatment approaches for the COVID-19 outbreak among dental students. An online survey was conducted about knowledge and awareness of existing potential treatment approaches for the COVID-19 outbreak among dental students.

Materials and Methods: A total questionnaire 15 questions were formed and results were collected from Google form and analyzed using software SPSS version 20.

Results: 69.52% of students were aware of existing potential treatment available for COVID-19.

Conclusion: The survey concluded that most dental students are aware of existing potential treatment approaches for the COVID-19 outbreak.

Key Words: Awareness, Existing potential treatment, Drug therapy, COVID-19, Dental students, Respiratory syndrome

INTRODUCTION

COVID-19 is the current pandemic across the globe caused by severe respiratory syndrome (SARS-CoV-2 or the coronavirus) which was first found in the Wuhan province of China in December 2019 and spread rapidly across the world due to high transmissibility and pathogenicity¹. Existing potential treatment approaches against the novel coronavirus behind COVID-19 Pandemic is nothing that drugs directly targeting the virus or likely to be most effective². Antimicrobial and chemotherapy are the number of potential therapeutic approaches for the treatment of COVID-19 and is growing rapidly for blocking the virus (SARS-CoV2) from entering cells disrupting its replication, Suppression overactive human immune responses and vaccines^{3,4}. There is still

no vaccine or definitive treatment for this virus because its pathogenesis and proliferation pathways are still unknown⁵

In addition to this medication is apparently in addition to the drugs is currently prescribed for treating COVID-19 such as hydroxychloroquine, remdesivir, atazanavir, saquinavir, and formoterol are potential drugs can be introduced as treatments for COVID-19^{6,7} if they prove to be effective in animal and clinical studies. At present, clinical evaluation of symptomatic treatment for COVID-19 in progress which may shortly provide preliminary results about the effectiveness of treatment⁸ (In addition COVID-19 pandemic has a great impact on psychological stress and mental health worldwide⁹. Patients with pre-existing diseases like respiratory Problems¹⁰, cardiovascular diseases are more prone to COVID-19 infection.

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Previously, we have studied awareness on various topics¹¹⁻¹⁹ and also the studies have been done on various topics like related to the methods to boost our immunity¹³ and the present study was done to assess and create awareness of existing potential treatment approaches for COVID-19 outbreak among the medical and dental students.

MATERIALS AND METHODS

A survey was conducted among 100 dental students of Saveetha Dental College. The survey contained 15 questions. The survey was conducted through an online basis and the questions asked were closed-ended questions. Software used was Google forms (<https://docs.google.com/forms/d/e/1FAIpQLSfYsr1wrW6vcAo0WqVNrUbQXB6HUUrWMX-cgB8pLks6gKrSaHA/viewform>). Method of representation of data was using pie charts.

A list of dependent variables in the survey is knowledge and awareness of existing potential treatment approaches for COVID-19 among dental students. List of independent variables are age and sex. Bar graphs were mainly used to represent the number of observations produced. Questionnaire validity checking was done by consulting experts.

QUESTIONNAIRE

1. What is your gender ?
2. Which year do you study ?
3. Are you aware about the most unexpected pandemic outbreak COVID-19?
4. Are you aware that COVID-19 originated from wuhan city in china?
5. Are you aware of symptoms of COVID-19 respiratory problems?
6. Are you aware on corona viruses strains and its virulence?
7. Are you aware of COVID-19 having low mortality rate compared to spread rate?
8. Are you aware of existing potential treatment available for COVID-19?
9. Are you aware of symptomatic and supportive treatment for COVID-19?
10. Are you aware about oxygen therapy for addressing respiratory COVID-19?
11. Are you aware of people on non-existence specific treatment for COVID-19?

Statistical Analysis

Data were collected and analyzed. A descriptive type of analysis was carried out. Correlation analysis was done by Chi-square test using SPSS software.

RESULTS AND DISCUSSION

A total of 100 participants were included in the study. Fig. 1 shows that 78% were male and 22% were female. Fig. 2 shows students 1st year 43.3%, 2nd year 27.9%, 3rd year 19.2%, and intern 9.6%. Fig. 3 shows that awareness about the most unexpected pandemic outbreak COVID-19 80% answered Yes and 20% answered No. Fig. 4 shows that awareness of the origin of COVID19. 67.6% male and 32.4% female. Fig. 5 shows that awareness of symptoms of COVID-19 respiratory problems 59% answered yes, 32.4% answered no and 8.6% answered maybe. Fig. 6 shows that awareness of coronavirus strains and its virulence 56.2% percent answered Yes, 32.4% answered No and 11.4% answered maybe. Fig. 7 shows that awareness of COVID-19 having a low mortality rate compared to spread rate 70.01% answered Yes and 29.8% answered No.

Fig. 8 shows awareness of existing potential treatment available for COVID-19. 69.5% answered yes and 30.5% answered no. Fig. 9 shows the awareness of symptomatic and supportive treatment for COVID-19. 62.9% answered Yes and 27.6% answered No and 9.5% answered maybe. Fig 10 shows that awareness about oxygen therapy for addressing respiratory impairment in COVID-19 78.1% answered Yes and 21.9% answered No. Fig. 11 shows that awareness of people on non existence of specific treatment for COVID-19. 81.7% answered Yes and 18.3% answered No.

There was a significant association observed between gender and awareness about the most unexpected pandemic outbreak COVID-19 (p-value is 0.091) (Fig. 12). Correlation studied between gender and awareness about symptoms of COVID-19 causing respiratory problems showed significance. A Pearson Chi-square test show (p-value is 0.093) which is statistically not significant (Fig. 13 and Fig. 14) The bar chart depicts the association between gender and awareness about the existing potential treatment available for COVID-19. Pearson Chi-square test shows p-value is 0.102 ($p > 0.05$) showing a statistically significant association between gender and the knowledge about the awareness about the existing potential treatment available for COVID-19. (Fig. 15) The bar chart depicts the association between gender and awareness of supportive treatment for treating COVID-19 symptoms. Pearson Chi-square test shows p-value is 0.101 ($p > 0.05$) showing a statistically significant difference between gender and the knowledge about the awareness of supportive and symptomatic treatment for treating COVID-19. Overall awareness about existing potential treatment approaches for the COVID-19 outbreak among medical and dental students¹⁴. In our present study, 80% are aware of the COVID-19 outbreak compared to the study done by Carmen et al. stated that 70% agreed in this study. In India was present in the study 69% aware of COVID-19 causes respiratory problems comparing study done by Chen et al. described that

60% agreed in their study¹⁵⁻¹⁶. Coronavirus Disease 2019 (COVID-19) has become a major global issue with the rising number of infected individuals and mortality in recent months¹⁷. Among all therapeutic approaches, arguments have been raised about hydroxychloroquine efficacy in the treatment of COVID-19. In our present study 63% aware of¹⁸ hydroxychloroquine treatments to cure COVID-19 comparing study done by Melles et al. showed 80% were aware in their study. 75% are aware of COVID-19 which is originated in China. On comparing our study with study done by comparing the study done by Phelan et al. as 80% were aware in their study and 70% were aware that corticosteroids and anti-viral methods are effective in the treatment of COVID-19 pandemic,^{19,20} which is caused by severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infection, another important raised question is to whether pre-morbid use or continued administration of inhaled corticosteroids (ICS) affects the outcomes of acute respiratory infections due to coronavirus^{21,22}. Another study on the potential treatments available for COVID-19 found that the use of plasma therapy can significantly help in the betterment of the health of the patients^{23,24,25}. Previous awareness studies done by our research committee have led us to study the awareness of existing potential treatment approaches for the COVID-19 outbreak^{26,27}. The limitation of the study is that it is composed of lesser participants and confined to a specific population as the level of awareness may vary among different populations and it must be noted that this survey is done on the dental students, not on the general population.

CONCLUSION

This study concludes that most of the dental students were aware of existing potential treatment approaches for the COVID-19 outbreak. Also, the survey was useful in creating awareness and knowledge about the existing potential treatment approaches for COVID-19 among dental Students.

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Conflict of Interest

The author has none to declare.

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Figure 1: Pie chart representing the percentage distribution of gender. 78.10% are male(Blue) and 21.90% are female

Figure 3: Pie chart representing the percentage distribution of awareness about the most unexpected pandemic outbreak COVID-19. 80% of participants answered yes (Blue) and 20% answered no (red)

Figure 2: Pie chart representing the percentage distribution of year of students. The figure shows the year of study 43.27% first year (Blue) and 27.86% second year (red) and 19.23% third year (green) and 9.62% intern(orange).

Figure 4: Pie chart representing the percentage distribution of awareness of origin of COVID-19. 67.62% of participants answered yes (Blue) and 32.8% answered no (red).

Figure 5: Pie chart representing the percentage distribution of awareness of symptoms of COVID-19 respiratory problems. 59% of participants answered yes (Blue) and 8% answered no (red) and 32% answered may be (green)

Figure 8: Pie chart representing the percentage distribution of awareness of existing potential treatment available for COVID-19. 69.52% of participants answered yes (Blue) and 30.48% answered no (red).

Figure 6: Pie chart representing the percentage distribution of awareness on Coronavirus strains and its virulence. 56% of participants answered yes (Blue) and 32% answered no (red) and 11% answered may be (green).

Figure 9: Pie chart representing the percentage distribution of awareness on symptomatic and supportive treatment for COVID-19. 62.8% of participants answered yes (Blue) and 27.62% answered no (red) and 9.52% answered may be (green).

Figure 7: Pie chart representing the percentage distribution awareness of COVID-19 having low mortality rate compared to spread rate. 70% of participants answered yes (Blue) and 30% answered no (red).

Figure 10: Pie chart representing the percentage distribution awareness about oxygen therapy for addressing respiratory impairment in Covid -19. 78% of participants answered yes (Blue) and 22% answered no (red).

Figure 11: Pie chart representing the percentage distribution of awareness of people on non existence of specific treatment for COVID-19. 82% of participants answered yes (Blue) and 18% answered no (red).

Figure 12: Bar chart depicting the association between gender and awareness about the most unexpected pandemic outbreak COVID-19 and its consequences. X axis represents the gender and Y axis represents the number of responses who were aware (blue) and unaware (red). The association was found to be statistically significant, Chi square test p value is 0.041 ($p > 0.05$) suggesting that males are more aware compared to females.

Figure 13: Bar chart depicting the association between gender and awareness about symptoms of COVID-19 causing respiratory problems. X axis represents the gender and Y axis represents the number of responses who were aware (blue) and unaware (red) and maybe (green). Males are more aware compared to females, However Chi-square test shows p value 0.093 ($p > 0.05$), which is statistically not significant.

Figure 14: Bar chart depicting the association between gender and awareness about existing potential treatment available for COVID-19. X axis represents the gender and Y axis represents the number of responses who were aware (blue) and unaware (red). Males were more aware than females. Chi-square test shows p value - 0.04 ($p > 0.05$), statistically significant.

Figure 15: Bar chart depicting the association between gender and awareness of supportive and symptomatic treatment for treating COVID-19 symptoms. X axis represents the gender and Y axis represents the no of responses who were aware (blue) and unaware (red). Males are more aware than females. Chi-square test shows p value is 0.04 ($p > 0.05$). Statistically significant.