Accredited No. 28/E/KPT/2019
p-ISSN: 1907-5987 e-ISSN: 2615-1790

RESEARCH ARTICLE

Impact of the Covid-19 Pandemic on Anxiety Levels in Dental Clinic A.W. Sjahranie General Hospital Samarinda

Cristiani Nadya Pramasari[*], Nydia Hanan[*], Portuna Putra Kambaya[*], Ruslim, Andre Kusuma[**]
[*]Profession Program of Dentistry, Faculty of Medicine, Universitas Mulawarman
[**]Dental student, Faculty of Medicine, Universitas Mulawarman

Online submission : 02 Januari 2021
Accept Submission : 23 Februari 2021

ABSTRACT

Background: *The Covid-19 is a viral infection caused by the novel coronavirus and interpersonal transmission occurs mainly via respiratory droplets and contact transmission. In some countries, the recommendations of the dental associations are to interrupt elective dental treatments, so only emergency or urgent cases are allowed. However, many patients are not aware of whether or not to attend their appointments at the dental clinic. Most of the patients are anxious but some patients feel calm to seek dental treatment.* ***Purpose:*** *This research is to find out the impact of the Covid-19 pandemic on anxiety levels and patient's visit in Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda.* ***Materials and Method:*** *This research was designed by the descriptive observational approach using a cross-sectional research design. The samples were new patients of child and adult who visited Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda. The research was conducted through questionnaires to measure anxiety levels about Covid-19 pandemic conditions and the average anxiety level of patients associated with "stay at home" recommendation and their impact on dental care success.* ***Result:*** *The questionnaires were answered by 55 patients (23 male/42% and 32 female/58%) who visited the Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda. The average level of patient anxiety for Covid-19 pandemic conditions is 4.87 for male patients and 4.42 for female patients. The level of anxiety about the impact of the Covid-19 pandemic on dental care is about the same in both men and women.* ***Conclusion:*** *Male patients are more anxious than women about the Covid-19 pandemic. But both showed similar anxiety about how pandemic conditions could affect their dental care.*

Keywords: *Anxiety levels, Covid-19 pandemic, dental treatment.*

Correspondence: *Cristiani Nadya Pramasari, Profession Program of Dentistry, Faculty of Medicine Universitas Mulawarman Samarinda. Email : nadyapramasari@fk.unmul.ac.id*

Denta Jurnal Kedokteran Gigi, Februari 2021; Vol.15 No.1; Hal 30-38
Available at http://journal-denta.hangtuah.ac.id/index.php/denta/issue/view/13
DOI: 10.30649/denta.v15i1

INTRODUCTION

In early 2020, the world was rocked by the presence of a severe infection with an unknown cause. Starting from a report from China to the World Health Organization (WHO), there were 44 severe pneumonia patients in a city area of Wuhan, Hubei Province, China, at the end of 2019.[1] The alleged discovery of the case relates to a wet market selling fish, marine animals and various other animals. On January 10, 2020 the cause began to be identified and results showed the presence of coronavirus infection which is classified as a new type of betacoronavirus.[2] At the end of January 2020, the World Health Organization (WHO) named the new virus Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) and its disease name as Coronavirus disease 2019 (Covid-19) and established the status of a global pandemic given the massive spread and severity in all countries.[3,4] Coronavirus is zoonotic, so it is possible that the virus originates in animals and is transmitted to humans.[5,6] SARS-CoV-2 is currently thought to be strong with evidence from various studies resulting in transmission through aerosols or droplets containing viruses or direct contact with mucous membranes, mouth fluids, instruments and surfaces contaminated with the virus.[7,8]

Dentistry is an action that has the potential to allow the transmission or cross-infection of various diseases because it is always exposed to saliva and blood.[9,10] In some countries, dentists are encouraged to delay elective dental care so that it is prioritized to handle urgent and emergency situations.[11] This began on March 16, 2020, when the American Dental Association (ADA) recommended dentists to delay all elective procedures. The ADA made guidelines on conditions that can be considered as dental emergencies and urgencies.[12] In dental emergencies, the ADA guidelines divide into two, the first being a potentially life-threatening dental emergency and requiring immediate treatment such as stopping ongoing tissue bleeding and reducing severe pain or infection. The second is dental urgencies which is a condition that requires immediate attention to relieve severe pain and or the risk of infection.[13]

In Indonesia, Persatuan Dokter Gigi Indonesia (PDGI) issued a circular letter calling for a temporary halt to dental care practices until the condition recovers. If it is not possible to suspend, then practical activities should only serve dental and oral emergency measures using complete Personal Protection Equipment (PPE following with the recommendations issued by the PDGI. During this situation, the patient is still unsure about whether or not to visit the dentist. This can be seen in the patient's visit to the dentist including to the Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda. Patients are still visiting the clinic even though the case is classified as elective cases. For example, the number of Oral Surgery cases with teeth extraction or odontectomy is still relatively high. Most of the patients are anxious and worried if they need dental treatment. However, some patients feel calm and not too disturbed by the news in various media about the risk of transmission of Covid-19 infection. The purpose of this study is to find out the impact of the Covid-19 pandemic on anxiety levels and patient's visits in Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda.

MATERIALS AND METHODS

This research has been submitted ethical clearance to the Research Ethics Commission A.W. Sjahranie General Hospital Samarinda. This type of research is descriptive analytics with cross-sectional study design. The subjects of the study were new patients of child and adult who visited Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda in the period October - November 2020 (1 month). Sampling techniques using total sampling techniques. This research uses instruments in the form of questionnaires (Figure 1). Anxiety levels about Covid-19 pandemic conditions and the average anxiety level of patients associated with "stay at

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DOI: 10.30649/denta.v15i1

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home" recommendation and their impact on dental care success were evaluated on a numerical rating scale, with a score scale of 0 meaning no anxiety and 10 extreme anxious. The data obtained was then analyzed using Chi-square, one-way ANOVA, and Tukey's tests with a $p < 0.05$.

RESULTS

In this study 55 patients visited the Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda and filled out a questionnaire within 1 month, with the number of male patients 23 people (42%) and female patients 32 people (58%) (Figure 2). The youngest male patient is 16 years old and the oldest is 64 years old, as well as the youngest female 16 years old and the oldest is 60 years old. The average age of both male and female patients is 36 years and there are 2 male patients (8.7%) who have or are experiencing symptoms of Covid-19.

Question number 5 is the patient's attitude towards "stay at home" recommendation. Results showed there were 8 patients (14.5%) who followed the appeal always at home only, 35 patients (63.6%) who left home for urgent needs, and as well as 12 patients (21.8%) who went outdoors as usual.

Question number 6 is the activity of patients who are studying or working either offline or online. A total of 19 patients (34.5%) went out for school or work, 20 patients (36.4%) school and work online, as well as 16 patients (29.1%) school or work.

Question number 7 is the level of anxiety of patients described with feelings towards "stay at home" recommendation and the condition of the Covid-19 pandemic. Results showed 63.6% of patients felt calm, 21.8% of patients felt anxious, 9.1% of patients were afraid, 1.8% of patients felt panic, and 3.6% of patients did not care about the "stay at home" recommendation and the condition of the Covid-19 pandemic.

Question number 8 is the level of patient anxiety about the Covid-19 pandemic condition which is assessed on a scale of 0 (not anxious) of 10.9%, scale 1 by 10.9%, scale 2 by 3.6%, scale 3 by 5.5%, scale 4 by 5.5%, scale 5 by 32.7%, scale 6 by 3.6%, scale 7 by 10.9%, scale of 8 by 9.1%, scale 9 by 3.6%, scale 10 (very anxious) as much as 3.6% (Figure 5). The average level of patient anxiety for Covid-19 pandemic conditions is 4.87 (SD 2.943) for male patients and 4.42 (SD 2.722) for female patients.

Question number 9 is a type of case in Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda. Patients who visited had complaints about tooth extraction (oral surgery) of 30 patients (54.5%), and at least 1 patient (1.8%) who wanted treatment for oral ulcers complaints.

Question number 10 is the patient's willingness to continue dental treatment after being scheduled by the dentist. Results showed there were 45 patients (81.8%) who agreed to come for follow-up, 2 patients (3.6%) who will not come for follow-up care, and 8 patients (14.5%) for follow-up treatment if urgent or emergency only.

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1. How old are you ? ..... years
2. Gender : ( ) Male ( ) Female
3. Where do you live ? City :
4. Have you had or are you experiencing symptoms of **COVID-19** ?
( ) Yes ( ) No
5. How are you complying "STAY AT HOME" recommendation in **COVID-19** pandemic?
( ) I don't leave home for nothing
( ) I leave home as little as necessary to buy food or medicine
( ) I go out normally to do several activities
6. Do you work or study?
( ) Yes, I am going out for work or study
( ) Yes, but I am working or study from home (online)
( ) I do not work or study
7. Considering the general anxiety level, how are you feeling about "STAY AT HOME" recommendation and **COVID-19** pandemic?
( ) Calm
( ) Anxious
( ) Fear
( ) Panic
( ) Indifferent
8. In a scale from 0 to 10, how is your anxiety with **COVID-19** pandemic? (0 = no anxiety, 10 = extreme anxiety)
( ) 0 ( ) 6
( ) 1 ( ) 7
( ) 2 ( ) 8
( ) 3 ( ) 9
( ) 4 ( ) 10
9. What kind of your dental treatment?
( ) I don't know, I was reffered by other clinic (example : radiotherapy, otolaringology, thorax and cardiovascular surgery)
( ) Orthodontic treatment
( ) Restorative treatment (teeth filling)
( ) Endodontic treatment (root canal treatment)
( ) Pedodontic treatment
( ) Oral surgery treatment (teeth extraction, odontectomy)
( ) Oral ulcer treatment
( ) Scalling
10. If you dentist got in touch to schedule an appointment, would you accept/go ?
( ) Yes
( ) Only in case of urgency or emergency
( ) No
11. What is your concern of attending a dental appointment in **COVID-19** pandemic?
( ) The risk of contaminating is high
( ) My treatment is not urgent
( ) No concern
12. What are your concerns about "STAY AT HOME" recommendation can affect ongoing dental treatments?
( ) It will delay the treatment, I was anxious for the result
( ) I am afraid of losing the investment (time or money)
( ) I am not worried
13. In a scale from 0 to 10, how is your anxiety regarding the impact of **COVID-19** pandemic and "STAY AT HOME" recommendation in your treatment ? (0 = no anxiety, 10 = extreme anxiety)
( ) 0 ( ) 6
( ) 1 ( ) 7
( ) 2 ( ) 8
( ) 3 ( ) 9
( ) 4 ( ) 10
( ) 5
14. What do you consider important in Dental and Oral Clinic nowadays?
( ) Personal Protective Equipment for dentists (mask, face shield, and disposable lab coat)
( ) Social distancing in waiting room
( ) Personal Protective Equipment for patients (mask, face shield, and disposable lab coat)
( ) Desinfectant (alcohol gel) in waiting room

Figure 1. Questionnaire applied to patients

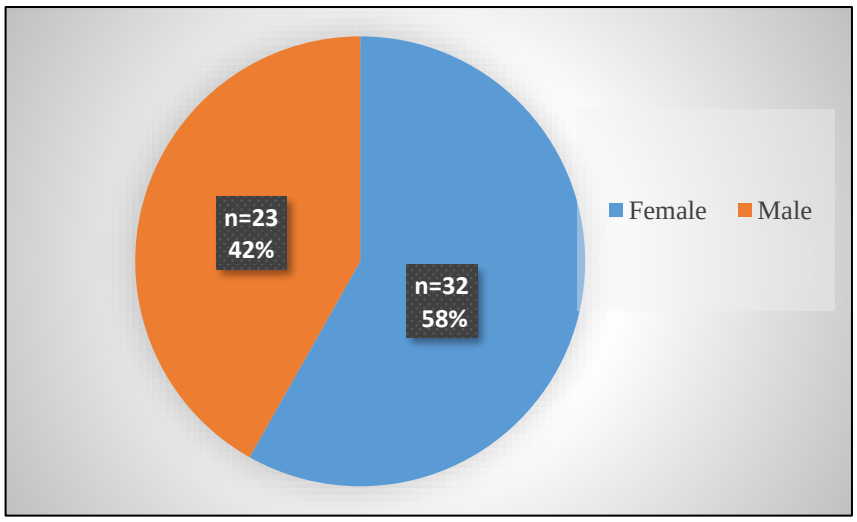

Figure 2. Number of patients

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Question number 11 is a factor that causes patients to come to the Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda during the Covid-19 pandemic. There were 23 patients (41.8%) who did not feel worried or anxious at all about his visit to our clinic. The reasons for consideration of the risk of transmission in the clinic are quite high and urgent or emergency dental treatment has a balanced distribution of 16 patients (29.1%).

Question number 12 is a patient's opinion about "stay at home" recommendations that can affect ongoing dental care. Results showed there were 22 patients (40%) expressing fear that the loss of investment in their care or dental condition could worsen, 21 patients (38.2%) feeling "stay at home" may delay dental care so they are more worried if the results are not satisfactory, and 12 patients (21.8%) who are not worried.

Question number 13 is the scale of patient anxiety level against the Covid-19 pandemic that can affect the success of dental treatment. Results showed the presence of 15 patients (27.3%) with moderate anxiety levels (scale 5). The average level of patient anxiety towards the Covid-19 pandemic condition that affects the success of dental treatment is 4.78 (SD 3.074) for male and 4.47 (SD 2.565) for female.

Question number 14 is the opinion of patients about essential points facing the Covid-19 pandemic in Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda. There is the presence of Personal Protection Equipment for doctors as many as 26 patients (47.3%), the presence of Personal Protection Equipment for patients as many as 10 patients (18.2%), avoiding crowds with other patients in the waiting room as many as 15 patients (27.3%), and the provision of alcohol disinfectant solutions in the waiting room of clinic as many as 4 patients (7.3%).

Men are more adhering to the "stay at home" recommendation than women. Men and women have a sense of calm towards "stay at home" recommendations and the condition of the Covid-19 pandemic. The level of anxiety about the Covid-19 pandemic is significantly greater in men than women. Male patients are more willing to come on the next visit to the Dental and Oral Clinic. All male and female patients have similar perceptions that "stay at home" can affect dental care, which is worrying about the success of their dental care. The level of anxiety about the impact of the Covid-19 pandemic on dental care is about the same in both men and women (Table 1).

Patients who have feelings of calm, anxiety, fear, and indifferent about the "stay at home" recommendation and the covid-19 pandemic condition want to come to the next dental care. Patients who agreed to come to the next dental care control whether it was an emergency or not showed a higher anxiety score than patients who did not want to come under control (Table 2).

Table 1. Comparison between men and women

Question	Male (N = 23)	Female (N = 32)	*P*
5.How are you complying with the "STAY AT HOME" recommendation in **COVID-19** pandemic?			
( ) I don't leave home for nothing ( ) I leave home as little as necessary to buy food or medicine ( ) I go out normally to do several activities	2 (8.7%) 17 (73.9%) 4 (17.4%)	6 (18.75%) 18 (56.25%) 8 (25%)	*P* = .00 2[a,*]
7. Considering the general anxiety level, how are you feeling about the "STAY AT HOME" recommendation and **COVID-19** pandemic?			
( ) Calm ( ) Anxious ( ) Fear ( ) Panic ( ) Indifferent	13 (56.6%) 5 (21.7%) 3 (13%) 0 (0%) 2 (8.7%)	22 (68.7%) 7 (21.9%) 2 (6.3%) 1 (3.1%) 0 (0%)	*P* = .01 2[a,*]
8. On a scale from 0 to 10, how is your anxiety with **COVID-19** pandemic?			
	Mean (SD) 4.87 (2.943)	Mean (SD) 4.42 (2.722)	*P* = .01 1[T,*]
10. If your dentist got in touch to schedule an appointment, would you accept/go ?			
( ) Yes	21 (91.3%) 2 (8.7%)	24 (75%) 6 (18.75%)	

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( ) Only in case of urgency or emergency ( ) No	0 (0%)	2 (6.25%)	*P* = .031[a,*]
12. What are your concerns about whether the "STAY AT HOME" recommendation can affect ongoing dental treatments?			
( ) It will delay the treatment, I was anxious for the result ( ) I am afraid of losing the investment (time or money) ( ) I am not worried	8 (34.8%) 10 (43.5%) 5 (21.7%)	13 (40.6%) 12 (37.5%) 7 (21.9%)	*P* = .027[a,*]
13. On a scale from 0 to 10, how is your anxiety regarding the impact of **COVID-19** pandemic and "STAY AT HOME" recommendation in your treatment?			
	Mean (SD) 4.78 (3.074)	Mean (SD) 4.47 (2.565)	*P* = .008[T,*]
14. What do you consider important in Dental and Oral Clinic nowadays?			
( ) Personal Protective Equipment for dentists (mask, face shield, and disposable lab coat) ( ) Social distancing in waiting room ( ) Personal Protective Equipment for patients (mask, face shield, and disposable lab coat) ( ) Desinfectant (alcohol gel) in waiting room	13 (56.5%) 6 (26.1%) 4 (17.4%) 0 (0%)	13 (40.6%) 9 (28.1%) 6 (18.8%) 4 (12.5)	*P* = .005[a,*]

[a]Chi-square test
[T]Independent T-Test
[*] Statistically significant for *P* < 0.05

Patients obeying the "stay at home" recommendation showed much lower levels of anxiety about the covid-19 pandemic condition and its impact on the success of dental treatment (Table 3).

Pearson's Correlation value of -0.235 indicates weak correlation strength and negative correlation. This indicates an inversely proportional correlation, meaning that the lower the age, the higher the anxiety level for Covid-19 (P = .002). Pearson's Correlation value of -0.256 indicates weak correlation strength and negative correlation. This indicates an inversely proportional correlation, meaning that the lower the age, the higher the level of anxiety that affects dental treatment during the Covid-19 pandemic (P = .002) (Table 4).

Table 2. Comparison between patient willingness to come care control and feelings towards Covid-19 pandemic conditions

Answers	Yes N (%)	No N (%)	Yes, if emergency N (%)	*P*
Calm Anxious Fear Panic Indifferent	27 (60%) 12 (26.67%) 4 (8.89%) 0 (0%) 2 (4.44%)	1 (50%) 0 (0%) 0 (0%) 1 (50%) 0 (0%)	7 (87.75%) 0 (0%) 1 (12.5%) 0 (0%) 0 (0%)	*P* = .000[*,**]
Level of anxiety/ Covid-19	Mean (SD) 4.73 (2.864)[a]	Mean (SD) 2.50 (3.536)[a]	Mean (SD) 4.38 (2.387)[b]	*P* = .000[*,T]
Level of anxiety/ impact on dental treatment	Mean (SD) 4.69 (2.827)[a]	Mean (SD) 2.00 (3.142)[a]	Mean (SD) 4.75 (2.605)[b]	*P* = .000[*,T]

Note : Different lowercase letters in the same row indicate the presence of a statistically significant difference by Tukey's test.
*Statistically significant for P < .05.
**Chi-square test.
†One-way ANOVA test.

Table 3. Comparison of the observance of "stay at home" recommendation and anxiety about the condition of the Covid-19 pandemic and its impact on the success of dental treatment

Levels of anxiety	Do not leave home N (%)	Stay home as much as possible N (%)	Go out normally N (%)	*P*
Level of anxiety/ Covid-19	3.25 (11.6)[a]	4.66 (63.6)[a]	5.33 (21.8)[b]	*P* = .000[*]
Level of anxiety/ impact on dental treatment	2.75 (21.8)[a]	5.09 (63.6)[a]	4.42 (11.6)[b]	*P* = .000[*]

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Note : Different lowercase letters in the same row indicate the presence of a statistically significant difference.
*Statistically significant for P < .05

Table 4. Correlation between patient age and anxiety levels about Covid-19 pandemic conditions and their impact on success of dental treatment

Correlations	r	*P*
Age x Level of anxiety/ Covid-19	- .235	*P* = .002
Age x Level of anxiety/ impact on dental treatment	- .256	*P* = .002

DISCUSSION

All countries including Indonesia have been affected by the Covid-19 pandemic which has lasted almost 1 year since the emergence of its first case in Wuhan, China. This research was conducted after 10 months of the Covid-19 pandemic. Patients visiting Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda seems to comply with the social distancing appeals and recommendations that have been set by the government as one of the efforts to prevent the spread of Covid-19. This can be shown with as many as 63.6% of patients leaving home only when they are urgent because they have to work, buy food, or seek treatment.

The internet, mass, and social media are currently considered a tool of finding health education and information. However, social media also can be spreading rumors and misinformation, causing people to panic and confuse [14]. The public can access many pieces of information about the current global situation including the number of deaths due to the Covid-19 outbreak [15]. Related to the condition, there will be a close relationship between the use of mass and social media with anxiety [16]. In this study, as many as 63,6 % of patients feel calm during this pandemic situation. They seemed calm, but the level of anxiety of men was even a little higher against the Covid-19 pandemic condition. This condition is different from Brazil and China in which is male patients appear calmer and not worried about the Covid-19 pandemic condition.[17] In our research, the average patient's anxiety level for the Covid-19 pandemic is about scale of 5, which indicates moderate anxiety levels.

As recommended by the World Health Organization and Persatuan Dokter Gigi Indonesia (PDGI), all elective dental care for all individuals should be deferred during the pandemic crisis. But dentists must be available to their patients for urgent and emergency care. This research found that dental caries and third molar impaction (oral surgery cases) was the most common dental problem during the Covid-19 pandemic in A.W. Sjahranie General Hospital Samarinda. Most patients (81.8%) states will come for follow-up care. Male patients have more cooperativeness to come to Dental and Oral Clinic than female patients, perhaps because men spend most of their time working either offline or online so when there is time to continue dental care it will actually take the time to seek treatment. Concerns about the success of dental care in men and women are not much different: they have the same fear that the results are unsatisfactory, indicated by a very small scale (Table 1). Patients who follow the "stay at home" recommendation have much lower levels of anxiety about the Covid-19 pandemic and their impact on the success of dental care. It can be explained that they are only at home so they feel safe and not too worried about the Covid-19 pandemic condition and so does the impact on the success of dental care that has been done.

Patients are more worried about delays in completing treatment because they expect the shortest duration of dental care possible. Patients also feel they have sacrificed time and money for dental care so that they can be cooperative to continue their dental care. Moreover, the presence of complaints especially tooth extractions or dental surgery is quite high resulting in the patient's willingness to carry out dental care. Inability to withstand dental pain outsized by anxiety over the pandemic situation

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itself so that patients ventured to come for dental treatment. The use of Personal Protection Equipment for dentists such as surgical masks, face shields, and surgical gowns and avoiding crowds with other patients in the waiting room is the most important precaution considered by patients to avoid contamination of Covid-19 in Dental and Oral Clinic, A.W. Sjahranie General Hospital Samarinda.

This research also obtained data that higher the level of anxiety about the Covid-19 pandemic in younger people compared to older ages. Older people tend to be less socially mobile than younger ones, especially those under 25 years of age, who are known to spend more time on social media and other news outlets.[18,19] Young participants may watch and listen to more negative news which will then intensify their feelings of anxiety and depression in times of crisis.[16] The level of adolescent anxiety during the Covid-19 pandemic is in a high category. This is in line with several previous studies.[20,21] It is necessary to conduct similar research with a greater number of samples.

CONCLUSIONS

"Stay at home" recommendation as a form of effort to prevent the spread of Covid-19 infection has an impact on the level of anxiety and patient's visiting who require dental and oral treatment. Patients who are willing to come or will only come in an emergency at advanced care show higher levels of anxiety than patients who do not want to come. Male patients are more anxious than women about the Covid-19 pandemic. But both showed similar anxiety about how pandemic conditions could affect their dental care. The increase in the number of confirmed cases of Covid-19 patients is increasing so that there needs to be innovations inpatient services that require initial treatment of patient complaints with teledentistry.

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Denta Jurnal Kedokteran Gigi, Februari 2021; Vol.15 No.1; Hal 30-38
Available at http://journal-denta.hangtuah.ac.id/index.php/denta/issue/view/13
DOI: 10.30649/denta.v15i1