

The Impact Of Oral Health Seeking Behavior During Covid-19 Outbrake Toward Dental Caries Severity

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Abstract

Most Indonesian people have a specific culture of oral health seeking behavior. They only visit their dentist when they feel pain in their teeth or mouth, especially during the Covid-19 pandemic. Due to their anxiety about the Covid-19 virus infection, and in addition of the government's policy that limiting visits to health center, people choose another choice. This study aimed to assess the effects of oral health seeking behavior during COVID-19 on dental caries severity in the Sumbersari, Jember district community. An analytical observational study was conducted with a cross sectional approach in March 2021 at Sumbersari District, Jember Regency. From 37,347 of 26-45 years old population, there were 101 involved in this study. Simple random sampling was conducted. Their demographic characteristics, oral health seeking behavior, and dental caries severity were recorded and analyzed descriptively, then continued with the Ordinal Regression test. The age of respondents was in the age range of 26-35 years (81.2%) and 55.4% of respondents were women. Their education level mostly undergraduate (61.4%). Assessing oral health behavior revealed that 77.23% of respondents did not visit professional dental services and 75.25% of them experienced caries with moderate to severe severity. The ordinal regression test showed that there was a significant effect of oral health seeking behavior toward dental caries severity. There is an impact of oral health seeking behavior on the severity of dental caries during the outbreak of Covid-19 pandemic.

Keywords: Health Behavior, Dental Caries, Covid-19 Outbreak.

INTRODUCTION

Most Indonesian people have a specific culture of oral health seeking behavior. They will visit the dentist only when the pain appears severe enough (1). The result of American Dental Association (ADA) survey on June 2020 as many as 62.9% of dentists have less patient visits than before Covid-19 Pandemic (2). Most

of people are worried about the sterilization and disinfection of medical equipment because they assume that medical equipments, nurses, dentists, and hospital are the source of the virus transmission(3). According to the Aqualianti et al, (2020) stated that about 59,7% respondents canceled their dental visit because of lack of urgency for treatment, followed by a fear of contracting the corona virus so that they choose to self-medicate by taking pain relievers on the market(4).

According to the Singh et al, (2020) about 48,1% (247 respondents) from the total amount 516 respondents in New Delhi, India experiencing dental problems during lockdown in Covid-19 pandemic. There are significant increasement on proportion of oral diseases and dental caries as many as 51,0% before Covid-19 Pandemic and 71,9% during Covid-19 Pandemic in Beijing, China (5). Pasiga (2021) also stated that most common oral health problems faced by people during the Covid-19 Pandemic is dental caries about 55,7%. The result from a research conducted by Rahma in Barito Kuala in 2020 showed that the increasement of dental caries prevalence from 46,9% to 56,17% during Covid-19 Pandemic. It is caused by the neglect behavior and fear of seeking the treatment during Covid-19 Pandemic. That phenomenon can increase the severity of dental caries(6).

Sumbersari Districts is one of districts in Jember which has heterogenous society either from the education or job. Based on the research background, the researcher wants to conduct a research to analyze the effects of oral health seeking behavior during COVID-19 on dental caries severity in the Summersari, Jember district community.

MATERIALS AND METHOD

An analytical observational study was conducted with a cross sectional approach in March 2021 at Summersari District, Jember Regency population was the mature age group in the range of 26-45 years old. Total number of mature age group was 37.347 people (Jenson et al., 2007). Simple random technique was set with the slovin formula obtained 100 respondents. Variables in this research were oral health seeking behavior and dental caries severity. The variable data of oral health seeking behavior measured using a questionnaire instruments. The result of oral health seeking behavior score was categorized into two categories: good and bad. Variable data of dental caries severity was measured by dental caries index with four categories: low, medium, high and severe (Jenson et al., 2007). It is categorized as low (1st Category) if there is no caries and filling. It is categorized as medium (2nd Category) if there is history of filling, tooth loss because of caries, there is no history of newest caries for last three years, and there is no new cavity now. The 3rd Category (high) if there is new caries during the past 18 months, poor oral hygiene, and there is one or more new dental caries. The 4th Category (severe)

if there is six or more new dental caries and extensive restoration at many teeth and hyposalivation. Then, the data is tabulated and tested using Regretion Ordinal test to analyze the influence of oral health seeking behavior toward dental caries severity in Summersari District, Jember during Covid-19 Pandemic. This research has conducted an Ethical Clearence at the Faculty of Dentistry, University of Jember with the ethical number: 1261/UN25.8/KEPK/DL/2021.

RESULTS AND DISCUSSION

The result of oral health seeking behavior toward dental caries severity in Summersari District, Jember during Covid-19 Pandemic was based on age, gender, level of education, oral health seeking behavior, and dental caries severity. The characteristic of respondents based on the age can be seen in the table 1.

Table 1. The characteristic of respondents based on the age

Age	Amount (N)	Percentage (%)
26-35 y.o (early adulthood)	82	81,2
36-45 y.o (late adulthood)	19	18,8
Total	101	100

Table 1 showed that early adulthood have 81,2% percentage while late adulthood have 18,8%. While the other 18,8% are the respondents who are 36-45 years old. The Data of Jember Statistic Center demonstrated that the amount of societies in Summersari with the age range 26-35 years old were approximately 28.327, while the societies with the age range of 36-45 years old were approximately 25.955. This showed that the amount of Summersari society with the age range of 36-45 years old were more than those who have age range of 36-45 years old (Salim, 2020). This was supported by Rahmayanti and Ariguntar (2017) and Rahardjo (2016) that the people who visit the dentist at Public health center were about 26–45 years old. This early adulthood group was a group of productive age who had potential risk of disease from work and their body resistance. In addition, productive age group was an age which tend to take advantages of health facilities (Hakim, 2020).

The characteristic of respondents based on the gender can be seen in the table 2.

Table 2. The characteristic of respondents based on the gender

Gender	Amount (N)	Percentage (%)
Male	45	44,6%

Female	56	55,4 %
Total	101	100

Table 2 showed 55,4% of respondents were female and 44,6% male (male respondents are more than the female). Female permanent tooth eruption is earlier than male, so that they are exposed to caries-causing factors for a longer time (Ferraro, 2010). The anxiety level of female was higher than male, so most of female decided not to visit the dentist. Female respondents pretend to have self-medication rather than male respondents (Efayanti et al., 2019). It would improve self-medication behavior. The data of Jember Statistic Centre demonstrated that the amount of Sumpster societies are 30.462 with 15.464 female societies and 14.997 male societies. This showed that the most societies of Sumpster District are female (Salim, 2020).

Another characteristic from the respondents in this research also can be seen from the level of education, as it is shown in table 3.

Table 3. The characteristic of respondents based on the level of education.

Level of Education	Amount (N)	Percentage (%)
Not schooling	1	1
Elementary School	1	1
JuniorHighSchool	2	2
SeniorHighSchool	30	29,7
Undergraduate	62	61,4
Post Grad./Doctoral	5	5
Total	101	100

In another category as it was shown in Table 3, most of respondents were Undergraduate Students (S1) in 61,4% percentage, 29,7% of respondents were graduated from Senior high school, 5% of respondents were graduated from Master degree, 2% of respondents were graduated from Junior high school, 1% of respondents were graduated from Elementary school, and the other 1% were not schooling. Sumpster is a district located in the center of Jember city. One of the characteristics of the citizens is that the education of the society is relatively higher than those who live in villages (Jamaludin, 2017). The higher level education of people, the higher need of problem solving of their oral health. Meanwhile, the lowest level education of people, have the lowest attention of their dental and oral health so they decided to have another choice (Notoadmojo, 2010). Mokoginta et al., (2016) stated

that someone with a higher level of education will get more information about health, so they can seek for dental care earlier.

The characteristic is based on the oral health seeking behavior as it is shown in the table 4.

Table 4. The characteristic of respondents based on the seeking for the treatment during Covid-19 Pandemic

al Health seeking Behavior	Amount (N)	Percentage (%)
Correct (visit dentist)	23	22,77%
Incorrect (other choice)	78	77,23%
Total	101	100

Next in the Table 4 showed that there were 22,77% of respondents who were seeking for treatment correctly and the other 77,23% of respondents who were seeking for treatment incorrectly. Oral Health Seeking behavior for incorrect treatment increases during this pandemic (Singh et al., 2020). It also showed 56% of respondents suffered sick of teeth in New Delhi, India. They did not feel necessary to check their disease to the dentist, 44% felt necessary contacting the dentist for their disease (Singh et al., 2020). It is suitable with a research conducted by Pasiga (2021) in South Sulawesi, Indonesia, that showed behavior of self-medicating action (42,7 %), left untreated (31,3 %), online consultation with a dentist (13,7 %), and came to the dentist (6,1 %) (Pasiga, 2021). The American Dental Association (ADA) presented the results of a survey conducted during the Covid-19 pandemic, revealed that 76% of dental clinics were closed and only serving emergency cases. About 19% are completely closed, and 5% are open but the number of patient who visits it is lower than before the pandemic (Brian & Weintraub, 2020). The increasing of incorrect treatment of tooth disease during the pandemic is due to the societies' fear of infecting the virus through teeth treatment or the crowd, decreasing of the income, and the policy of the limitation to visiting dental service center (Pasiga et al., 2020 ; Sun et al., 2020 ; Makowska et al., 2020 ; Zhang, 2021)

The characteristic of respondents based on the dental caries severity can be seen in the table 5.

Table 5. The characteristic of respondents based on the dental caries severity

Dental Caries Severity	Amount (N)	Percentage (%)
Low	25	24,75%

Medium	36	35,64%
High	38	37,6%
Severe	2	1,98%
Total	101	100

Table 5 showed that 24,75% of respondents had low level of dental caries, while 72,25% of other respondents had medium until severe level of dental caries. The survey with 1000 respondents (more than 18 years old) during the pandemic showed the decreasing of brushing teeth behaviour comparing to the survey result on 2012. The incorrect behaviour is increasing at home. 2 of 5 adults did not brush their teeth in a day, 7 of 10 adults avoided going to the dentist (Kemenkes, 2021). The similar research was conducted by Karaaslan and Dikilitas (2020) about behaviour of treating teeth health during covid-19, obtained the result that 59,6% respondents were not necessary to brush their teeth because they did not go outside of home, so that more societies have risk of suffering caries during pandemic (Karaaslan and Dikilitas, 2020 ; Kamel, 2021).

The analysis test of oral health seeking behavior toward dental caries severity can been in the Table 6.

Table 6. The analysis result of oral health seeking behavior toward dental caries severity during Covid-19 pandemic

Variable	Significance	Note/Information
Oral health seeking behavior – Dental caries severity	0,000	Oral health seeking behavior was increasing dental caries severity

Table 6 revealed that there was a significance value of 0.000, which means there was an effect or influence of oral health seeking behavior toward dental caries severity during Covid-19 pandemic. According to the Manu and Ratu's research in 2019, about 83% of respondents are aware of the risk that dental cavities that are left untouched and not filled will affect their overall health. They also stated that traditional medicine could not close the cavities. The respondents' knowledge about dental caries can influence the decision making to seek treatment that can overcome the dental and oral problems experienced. Although they realized that treatment at dental clinic was the right choice to overcome the problem of toothache. Factors that cause poor dental health conditions in the community are the lack of poor people visiting the dentist. Their paradigm is still disease treatment oriented, not at the prevention

stage and to avoid contact the disease. People will only choose to go to the dentist if they have felt pain. The increasing of gingivitis and cavity during pandemic is due to the changes of society life style that the society did not brush their teeth 2 times a day, often eating snack at home, and not visiting the dentist to have a treatment (Shamsoddin et al., 2021). The seeking of self medication affects the level of caries severity due to more caries are ignored, more teeth are suffering cariogenic (Maciel, 2021). The seeking of incorrect treatment to the dentist can increase the caries (Costa et al., 2012).

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