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A Study of Knowledge, Attitude, and Practice of Nasal Irrigation During the COVID-19 Pandemic

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A B S T R A C T

COVID-19 is a respiratory tract infection caused by the novel coronavirus (nCov). Nasal irrigation is one of the efforts to prevent COVID-19. Nasal irrigation is an act of flushing saline solution into the nasal cavity. This research aims to determine level of knowledge, attitudes, and practices of the community regarding nasal irrigation during the COVID-19 pandemic. This study was a descriptive observational study. The sample of this research was the people of Palembang who were eligible for the inclusion and exclusion criteria with the consecutive sampling technique as many as 398 respondents. Data were obtained through primary data in the form of questionnaires, processed using the SPSS program, and analyzed using univariate analysis. The majority of respondents were aged 18-25 years old (65.5%) and had senior high school 58.0%. The level of public knowledge about nasal irrigation during the COVID-19 pandemic was in the moderate category of 36.2%. The level of public attitudes regarding nasal irrigation during the COVID-19 pandemic was in the good category at 83.4%. The level of nasal irrigation practice was included in the bad category of 75.6%. In conclusion, the community of Palembang had moderate level of knowledge, a good level of attitude, and a bad level of practice regarding nasal irrigation during COVID-19 pandemic.

1. Introduction

Coronavirus disease (also known as COVID-19) is a respiratory disease. The etiology of COVID-19 is severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2), which can cause mild to severe pneumonia.[1] The first report regarding COVID-19 outbreak found that the main source of exposure is from a seafood market in Wuhan, China, at the end of December 2019 and since then it had spread rapidly across the world including Indonesia which reported its initial case in early March 2020.[2,3] The cumulative number of confirmed cases topped 1.183.555 and 32.167 deaths occurred in Indonesia on February 11th, 2021.[3]

COVID-19 is transmitted through animals and human.[4] Coronavirus is spread in various animals, such as bird and mammals, however the animal vector caused COVID-19 is not known up. The most common ways of transmission are via direct contact through droplets splashes from an infected person or someone with respiratory symptoms (for example, coughing and sneezing) and via indirect contact in form of contaminated surfaces of environmental objects that has been used by an infected person, including littered used masks, then the uninfected person touch parts of their face, namely eyes, nose, and mouth, that are common routes of spreading infection.[5,6]

These cases are constantly increasing so that efforts needed to take prevent the spread and reduce the case fatality rate. One of the measures that can be done is regular nasal irrigation. Nasal irrigation is useful for maintaining nasal health, such as for removing mucous, infective pathogens, and inflammatory mediators. Nasal irrigation is defined as a procedure of spraying saline solution in to the nasal cavity.[7] The most commonly used saline solution is isotonic saline solution, for example NaCl 0.9%. However, there were studies which stated that the use of hypertonic saline solution, povidone iodine (PVI), has a superior virusidal activity and thus reduce viral load.[7,8] This study aims to determine level of knowledge, attitude, and practice of the community regarding nasal irrigation during COVID-19 pandemic.

2. Methods

This study used a descriptive observational design with the population of Palembang, Indonesia. The sampling technique used was consecutive sampling, samples were obtained consecutively as many as 26 samples from every district in Palembang city that met the study criteria until the number of required respondents was fulfilled. The respondents of this study were 398 people who met the inclusion and exclusion criteria. The inclusion criteria for this study were people of Palembang aged between 18-55 years old, with last education level of primary school, junior high school, high school, and bachelor/postgraduate/doctoral degree, who agreed to participate in the study and signed the informed consent. The exclusion criteria were respondents who did not completed and collected the questionnaire. The data from this study were primary data, collected from questionnaires with close-ended questions. The questions covered the sociodemographic of respondents, knowledge, attitude, and practices regarding nasal irrigation. The questionnaire was distributed online as a Google-form via Whatsapp, Line, and Instagram. The respondents were guaranteed anonymity and gave their consent. The time of research was conducted from November to December 2021 in Palembang, Indonesia. Throughout the research period, there were 472 respondents who filled out the questionnaire.

The questionnaire consists of six sections. The first section presents informed consent agreeing to participate in the study. The second section assessed general information and demographic variables including age, address, last level of education, and phone number. The third, fourth, and fifth section evaluate the level of the respondent's knowledge, attitude, and practice, respectively. The last section contains information to inform the public about nasal irrigation.

Univariate analysis techniques will be used for data analysis using the Statistical Package for Social Sciences (SPSS). The level of knowledge (twenty-one items), attitudes (five items), and practice (two items) were calculated based on a questionnaire made by the author. Each item in the knowledge section has a value of 1 if the question is answered correctly and 0 if the question is answered incorrectly. Each item on the attitude section has a value of 1 if agreed and 0 if disagrees. As for the level of practice based on the frequency of daily nasal irrigation, the value is 2 if they do it twice a day, 1 if they do it once a day, and 0 if they don't do it at all.

3. Results and Discussion

Figure 1 shows the distribution data of respondents according to the districts in Palembang, and all participants were distributed in every district in Palembang. The distributions were as follows: Alang-Alang Lebar, Gandus, Ilir Barat 1, Ilir Barat 2, and Ilir Timur 2 District each consisted of 26 respondents. Ilir Timur 1, Kemuning, Kertapati, Plaju, Seberang Ulu 1, and Seberang Ulu 2 districts each consisted of 25 respondents. While Kertapati, Sematang Borang, and Sukarami Districts, consisted of 24 respondents. Bukit Kecil and Sako Districts each consisted of 23 respondents.

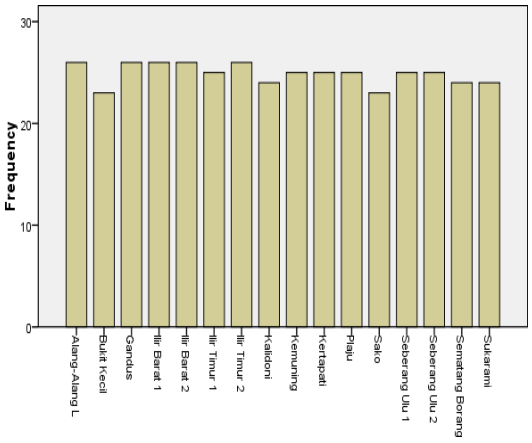

Figure 1. Distribution of respondents according to the districts in Palembang.

According to table 1, the majority of respondents were in the age category of 18-25 years old, which was 261 respondents (65.6%), and the least was in the age category of 46-55 years old, which was 28 respondents (7.0%). According to the level of education, more than half of the respondents belonged to the high school category, which was 231 respondents (58.5%).

Table 1. Sociodemographic distribution of respondents.

Variable	Frequency (%)
Age (years old)	
18-25	261 (65.6)
26-45	109 (27.4)
46-55	28 (7.0)
Education level	
Primary school	0 (0)
Junior high school	2 (0.5)
Senior high school	231 (58.0)
Bachelor/postgraduate/doctoral degree	165 (41.5)
Total	398 (100)

According to table 2, 36.2% of respondents had moderate knowledge, and 83.4% of respondents showed a good attitude regarding nasal irrigation. However, most respondents showed bad practice levels in nasal irrigation (75.6%).

Table 2. Knowledge, attitude, and practice level regarding nasal irrigation.

Variable	Frequency (%)
Knowledge level	
Good	141 (35.4)
Moderate	144 (36.2)
Bad	113 (28.4)
Attitude level	
Good	332 (83.4)
Moderate	56 (14.1)
Bad	10 (2.5)
Practice level	
Good	29 (7.3)
Moderate	68 (17.1)
Bad	301 (75.6)
Total	398 (100)

It is implied that the higher their education will be, the higher an individual will in pursuing information regarding new knowledge and the easier it is to receive the knowledge they get. The factor that can affect the level of knowledge of an individual is an information source. Information sources regarding health can be obtained from various parties, such as a doctor, healthcare workers, friends, teachers, and also social media.[9] Attitudes are formed by personal experience or the people around them, which cause an individual's urge to stay away from an object or a disease by preventing the risk of developing the disease.[10] In the study, the people showed a good attitude, meaning that the people supported COVID-19 prevention.

According to the Green theory, there are three main factors that affect a person's health behavior. The first is a predisposing factor regarding the individual's knowledge. Judging from the result of the level of knowledge, the majority of the people show a moderate level of knowledge regarding nasal irrigation. The second factor is enabling factor, which means the availability of facilities and health care materials, including the materials used for nasal irrigation (NaCl 0.9% solution), which probably is not available in every household, and the majority of people do not know how to make a saline solution at home.[11,12] The third factor is the reinforcing factor, which means there is a relationship between the healthcare workers and other community leaders around them who never perform nasal irrigation.[13]

The three factors are interrelated and form health behavior.[14] In this case, one of the factors that cause people never to perform nasal irrigation can be because they never see their close relatives perform it, so it is not emulated. Nasal irrigation is a procedure of spraying the saline solution into the nasal cavity.[7,8] An incorrect nasal irrigation method may cause pain due to the water flow or the syringe tip nudging the nasal septum, which then elicits a negative response in the individual. This negative response can take the form of avoiding performing nasal irrigation procedures due to discomfort. This can also be a factor for someone to be reluctant to perform nasal irrigation. Usually, nasal irrigation is performed by individuals with nasal disease symptoms such as rhinosinusitis because it is advised by a doctor as adjuvant therapy. They are more compliant and more pleased to perform nasal irrigation because they can have more control of their health, effective in reducing chronic rhinosinusitis symptoms, and may reduce the need to use the medicine. To adapt to new health habits, people need to see and hear the correct information. Similarly, with hand washing and using a mask, currently, people are more obedient in doing so as a preventive measure against COVID-19.[12,14]

4. Conclusion

The community of Palembang had a moderate level of knowledge, a good attitude, and a bad level of practice regarding nasal irrigation during the COVID-19 pandemic era.

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