

ANALYSIS OF LARGE-SCALE SOCIAL RESTRICTIONS AT THE PANDEMIC PERIOD OF COVID 19 IN INDONESIA (PUBLIC HEALTH AND ENVIRONMENTAL)

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Abstract

The-Covid 19 pandemic is a serious public health problem. The government imposes large-scale social restrictions to reduce morbidity and mortality caused by covid 19. PSBB is regulated in the Regulation of the Minister of Health of the Republic of Indonesia Number 9 of 2020 concerning Guidelines for Large-Scale Social Restrictions in the Context of Accelerating Handling of Corona Virus Disease 2019 (Covid-19). This study aims to capture the phenomenon of large-scale social distancing programs during the pandemic in Indonesia from a public health and environmental perspective. This research method is a systematic literature review that explores information from previous research studies that have been published. The results of this study include information that there is still community non-compliance regarding the implementation of PSBB which has an impact on the case trend. Exposure to NO₂ can be a contributor to the high mortality rate of Covid-19. NO₂ can cause lung inflammation, which in turn can increase the risk of death in people with covid-19. Much of the NO₂ pollution comes from motorized vehicle emissions. PSBB can reduce the use of fuel oil for motorized vehicles so as to reduce CO₂ emission levels which can reduce global warming and climate change. The results of a literacy study conducted in the city of Bekasi related to the Effectiveness of Large-Scale Social Restrictions (PSBB) in Bekasi City in Overcoming COVID-19 with the Susceptible-Infected-Recovered (SIR) Model, PSBB has effectively decreased the trend of Covid-19 cases. integrated to control cases of covid-19 in Indonesia.

Keywords: covid-19, large-scale social restrictions, environment, health.

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Background

Corona virus was first discovered in Wuhan and has been declared a pandemic. The Covid-19 pandemic is a serious public health problem. Symptoms of this disease include fever, dry cough, fatigue, shortness of breath and gastrointestinal disorders. Covid-19 transmission is transmitted through droplets released by the host. The risk of complications from covid-19 is higher in some vulnerable populations, especially elderly, individuals who have chronic conditions. The risk of death increases with age and is higher in those who have diabetes, heart disease, blood clotting problems or who show signs of sepsis (Cerkoney & Hart, 1980). There were 94,486 (5.3%) active cases in Indonesia with a total of 49,627 (2.8%) who died in May 2021, which were recorded on the covid.go.id page (Widyaparaga, Widodo, Handika, Setiawan, & Lindasista, 2020).

One of the efforts to prevent the transmission of Covid-19 includes washing hands with soap, avoiding touching the face and avoiding fission contact with other people or better known as social distancing. Social distancing can be defined as a practice or a way to widen the distance between people in an effort to reduce the chance of disease transmission. Even though there has been an appeal from the government, the increase is still happening, especially in Indonesia. So the government imposed large-scale social restrictions during the pandemic Covid 19 (Handayanto & Herlawati, 2020; Susilo et al., 2020).

In its implementation, large-scale social restrictions regulate school and work vacations, religious activities, activities in public facilities, socio-cultural activities, modes of transportation as well as those related to defense and security. PSBB is carried out to restrict certain activities in an area that is suspected of being infected with Covid 19. It is hoped that it can prevent the spread of the virus from spreading (Sewang & Aswad, 2021).

With the implementation of the PSBB, it is hoped that the community can comply with all elements of the health protocol so that the pandemic ends quickly and can return to normal. However, in reality, not all people adhere to policy policies to reduce the spread of the virus curve. Non-compliance with each scenario has different reasons. The willingness of individuals to comply with health behavior recommended by the government depends on an understanding of the importance of these policies. In general, it is believed by a person that he will take preventive action depending on the health beliefs of the individual (Ivanka, 2020).

The environment is an aspect that affects the improvement of public health status. Likewise, the application of social restrictions on a large scale will also have implications for the environment. In urban areas such as Jakarta, Bandung, Medan, of course, many people use motorized vehicles, with the PSBB reducing the level of motorized use and using fuel directly and will have an impact on the environment. So from the above background, the researcher will take a picture of the large-scale social restriction phenomenon that has been running in Indonesia from the perspective of public health and the environment.

RESEARCH METHODS

This research is a systematic literature review which reviews the phenomenon from journal sources that are traced using google scholar, Garuda portal. The search was conducted on May 26, 2021. The key phrase used is large-scale social distancing.

RESEARCH RESULTS

Health Belief Model (HBM) and Social Restriction Policy Compliance behavior on a Large Scale

Research conducted by (Sen-Crowe, McKenney, & Elkbuli, 2020) Pratitis N found that there was a significant relationship between HBM and PSBB compliance behavior during the Covid 19 pandemic and had a positive relationship. The results of this study are evidence based that we in a pandemic condition must comply with the PSBB policy set by the government in order to break

the chain of transmission of covid 19. PSBB itself has been regulated in (Li, Bai, & Hashikawa, 2020). HBM itself is used to capture disease prevention behavior and health behavior adherence. HBM as a whole has a strong relationship with recommended health behavior, but it is proven that the perceived barrier, the perceived susceptibility of the perceived benefits has a relatively weak severity relationship with PSBB compliance (Nofri, Faizal, & Mohadi, 2017).

Factors related to compliance of PSBB, namely gender ($p = 0.005$), level of education, level of knowledge, and determinants of attitude. PSBB compliance is increasing among female respondents with higher levels of education, good knowledge, and attitudes that support the PSBB policy (Mock, Hülsebusch, Ungethüm, & Schmid, 2009). community is expected to be able to comply with the recommended health behavior so that the virus does not spread and there are no more cases of infection so that this pandemic will quickly end and the situation will return to normal soon. But in reality, not all of the people adhere to policies in reducing the spread curve of the virus. obedience is one of the health care behaviors, namely a person's efforts to maintain health or maintain health so as not to get sick and an effort to cure him when he is sick. Public awareness of the importance of complying with policies issued by the government regarding health behavior during a pandemic is still very bad. Many violated the government's recommendation to comply with the PSBB.

The government has also prohibited going home during Eid al-Fitr, but many people still go home even though quantitatively not as much as before the pandemic. Take the example of one of the health centers in Tasikmalaya, namely the Taraju Community Health Center. The Taraju Health Center implements horseshoe blocking during the Eid season. When the insulation is carried out a Swab is based on sampling. The homecoming phenomenon in taraju is not so much like last year. every incoming traveler must include the antigen results. There is a post for each village to collect data on homecoming. Every traveler who comes is educated to apply health protocols. Ideally, travelers should be quarantined but to be quarantined is rather difficult (no quarantine is carried out). Protocol recommendation is still implemented for travelers. In their daily lives, there are still many people who do not use masks in the work area of the Taraju Community Health Center.

The impact of Large-scale Social Restrictions (PSBB) during the Pandemic Time COVID-19 on Environmental Factors

Nitrous oxides such as nitric oxide and nitrogen dioxide are air pollutants that play an important role in troposphere pollution and climate change, high NO_2 concentrations will cause lung infections in humans, so these pollutants are listed in pollutants that have a negative impact on the environment and also on human health (Meliala, Hort, & Trisnantoro, 2013).

The results of a study conducted in South Sumatra, the city of Palembang were divided into three categories, namely before large-scale social restrictions, during PSBB and in 2019. The results showed that the average Troposphere NO_2 concentration before PSBB was $109.4 \times 10^{13} \text{ cm}^{-2}$ molecules, and then decreased by 24.5% during the PSBB. However, there was an increase of 0.2% of the Troposphere NO_2 concentration in the same period in 2019. The decrease in Tropospheric NO_2 concentrations could be caused by the movement of vehicles and restricted industrial activities during the PSBB period. The output from this research is expected to be used to add scientific data or information regarding the status of air quality during the COVID-19 pandemic in Indonesia. From this study, information was also obtained that NO_2 exposure could be a contributor to the high mortality rate of Covid 19. NO_2 can cause lung inflammation which in turn can increase the risk of death in people with Covid 19. Most of the NO_2 pollution comes from motorized vehicle emissions (Nofri et al., 2017; Rosenstock, 1974).

The PSBB policy issued by the government has an impact on limiting the mobility of the population for activities outside the home. This phenomenon has implications for the use of petroleum materials and the use of motorized vehicles. Then it can cause changes in the amount of CO_2

emissions into the atmosphere. The results of previous research related to fuel oil consumption showed that the average amount of fuel oil consumption for each vehicle during the PSBB was as follows for motorbikes of 4.01 liters / unit of vehicle and 20.6 liters of cars / vehicle unit. The total LHR of motorized vehicles on the three roads is 159,621 vehicles (Transitional PSBB) and 132,623 vehicles (PSBB Total). The total amount of CO₂ emissions from the three roads during the PSBB transition was 68,863 tons / year and at the time of PSBB the total CO₂ emission was 52,287 tons / year. The highest sequence of CO₂ emissions is on Jalan MH. Thamrin, then Jalan Abdul Muis and the lowest emission is on Jalan Soldier KKO Usman Harun. Based on this research, overall there was a reduction in CO₂ emissions on the three roads by 24% between the Transitional PSBB and the Total PSBB conditions. The reduction in CO₂ emissions occurred due to the limited mobility of people using motorized vehicles and changes in fuel consumption during the PSBB policy period. According to a study conducted by (Li et al., 2020) environmentally friendly motor vehicle fuel substitutions such as biofuels and policies to limit the use of old vehicles can help achieve the national emission reduction target by 2030 (Sen-Crowe et al., 2020)

Impact on the Covid-19 Case

Many parties agree and disagree with the implementation of the PSBB in Indonesia. So it is important to evaluate whether this PSBB is effective in reducing cases. The results of studies that have been conducted in the city of Bekasi are related to the Effectiveness of Large-Scale Social Restrictions (PSBB) in Bekasi City in Overcoming COVID-19 with the Susceptible-Infected-Recovered (SIR) Model. There is a decrease in cases infected with beta and gamma, respectively 0.071 and 0.05 and is predicted to end in June 2020.¹⁴

PSBB is only one of the many programs in dealing with Covid-19. So there is a need for an integrated program between the government, private sector and the world of education that can be accommodated in the Covid-19 task force unit. To track under reported cases, tracing, tracking and treatment programs need to be intensified. As well as public education regarding the prevention of Covid-19, namely maintaining distance, wearing masks and washing hands using soap with running water. The researchers themselves gave suggestions for implementing a total lockdown in Indonesia for 1 month in order to stop the transmission of Covid-19 (Nofri et al., 2017; Rosenstock, 1974).

CONCLUSION

It is important that people comply with government policies, namely large-scale social restrictions to cope with the COVID-19 pandemic in Indonesia. PSBB has a impact positive on the environment and can reduce the potential for global warming and climate change.

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