



Best Practice of Prevention of Covid-19 Transmission Through Small Island Region Quarantine: Study on Kadatua Island, South Buton District, Indonesia

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Abstract

This study aimed to analyze the quarantine strategy of Kadatua Island to prevent the transmission of Covid-19. The Data was obtained through direct observation and in-depth interviews with the Covid-19 countermeasure officer in the region. The research used an explanatory sequential mix-method, where the researcher first conducts quantitative research, analyzes the results, and arranges them, to explain in more detail with qualitative research. We found that Kadatua Island is a small island and separated from the mainland of South Buton district has the advantage that it is relatively easy to control the mobility of newly arrived residents from outside the area. Local governments and indigenous people work together in a regional quarantine effort with a coordinated supervision system. When the community wants to enter Kadatua Island, they will be directed to do a regional quarantine, empty houses will be prepared for 14-21 days and will be closely monitored by village officials. During the home quarantine, food for people undergoing quarantine was provided by their respective families and some were supplied from the village. In addition, the efforts of indigenous peoples are also called 'poago' by forbidding communities from doing activities outside and making sounds. All these efforts are considered effective, especially in controlling the transmission of Covid-19 on Kadatua Island. The effectiveness is supported by several geographical locations, local government policies that are health-oriented, and supports from citizens and indigenous peoples. Local governments need to make similar strategies on a larger scale for other island regions.

1. Introduction

Coronavirus disease (Covid-19) pandemic has threatened global health (WHO, 2020). Increased antimicrobial resistance, new pathogenic virus strains have triggered fears of a global outbreak of infectious diseases (Nerlich, B., &

Halliday, C. 2007). The determinants of a pandemic are very varied and complex. Important elements are infectious agents (eg viruses or bacteria), hosts (eg humans), and the environment. Host resistance to infection depends on several factors including immunocompetence. Environmental factors can vary and can inhibit or support the occurrence of transmission (Martini, Mariano, et al. 2019). In addition to infectious disease, Covid-19 has developed psychological disturbance to the whole community (Taylor, S. 2019; Wang, Cuiyan, et al. 2020).

According to research reported in Mauritius, small islands can effectively protect against disease epidemics. A preparedness plan is necessary, which includes protocols for preventing and screening all passengers upon arrival at the airport/port. Furthermore, border restrictions to disease-affected countries should be implemented. The tracking of everyone who has had contact with a COVID-19 case by experienced and dedicated health workers is a crucial component of epidemic management (Sun, M. C., & Wah, C. B. L. C, 2020).

Several countries and territories are exercising quarantine to slow the transmission of Covid-19. One area that was quite successful in implementing lockdown and reducing the Covid-19 case was Wuhan, China (Lau, Hien, et al. 2020). Some scenarios include partial lockdown, total lockdown and Social Restrictions (Cohen, J., & Kupferschmidt, K. 2020). There are several small islands in Southeast Sulawesi that have succeeded in preventing Covid-19 transmission, one of which is Kadatua Island in South Buton Regency. This study aimed to analyze the quarantine strategy of Kadatua Island to prevent the transmission of Covid-19

2. Methodology

The study used an explanatory sequential mix-method, where the researcher first conducts quantitative research, analyzes the results and then arranges them, to explain them in more detail with qualitative research.

2.1 Study Area

The study location, Kadatua Island is one of the islands located in the administrative area of South Buton Regency, Southeast Sulawesi. The island which is in position 5°31'56.044" South Latitude and 122°28'51.558" East BT has an area of 24.04 km² or covers 4.04% of the total area of South Buton Regency. Based on data from South Buton Regency in Figures 2020, the population of the island in 2019 was 11,271 people, spread in 10 villages (BPS Statistics of Regency, 2020).

Kadatua island has the same characteristics as other small islands (Sarfati, Diana, et al. 2019), geographically isolated, relatively narrow land space, limited access to development and health services, and very limited community mobility (Royle, S. A. 1995). Specifically, the health facilities found in this island are 1 public health center, 11 units of integrated service post, and the number of medical professionals consists of 4 doctors, 7 nurses, 12 midwives, 4 pharmaceutical officers, and 3 nutritionists (BPS Statistics of Regency, 2020).

2.2 Data collection

The collection of object information at the research location is obtained through the help of remote sensing methods, using high-resolution satellite

imagery from Nokia (Here.com Hybrid) and Satellite (Google maps) that are downloaded using the SAS Planet open-source software (Gangaraju, M., et al. 2017). Data on the implementation of the island quarantine was obtained through direct observation and in-depth interviews at the Covid-19 countermeasure officer, a total of 15 people. Data collected included how the island quarantine concept was applied, the form of local government responsibilities, community rights and obligations, the implementation of quarantine at the island's entrance, the implementation of quarantine on the mainland, supervision, and provisions for sanctions for violations. Data collection was conducted on March 20 - December 30, 2020.

2.3 Data Analyses

Satellite imagery is processed with the help of ArcMap 10.3 Software 21 to obtain spatial features in and out of the lane (especially the passenger port) of Kadatua Island community mobility. Descriptive Analysis was used to identify best practices for preventing Covid-19 transmission on Kadatua Island.

3. Result

3.1 The entry and exit (in and out) access of the island community



Access in and out of island communities, as per the results of interpretation of satellite imagery combined with field observations found that access in and out of the community of Kadatua Island, is from the Topa port of Baubau City to the Port of Bhanabungi (with shipping intensity more than 10 times a day), Kaofe and Kapoa ports of 1-2 times every day. The spatial appearance of Kadatua Island community mobility access through these 4 ports can be seen in Figure 1.

Based on information from the local community, in one trip passenger ships can carry as many as 15 passengers with an average of more than 10 times the crossing. So, it can be estimated that in one day as many as 150 people cross the

island. It was during the crossing that health workers implemented the Covid-19 protocol for everyone who entered Kadatua Island.

3.2 The best practice implementation of island region quarantine

The health quarantine implemented on Kadatua Island is an effort to prevent and counter the transmission of Covid-19 which could potentially cause health problems in the island's community. Based on the development trend of the Covid-19 case in South Buton District until December 30, 2020.

The island quarantine procedure is that every citizen who wants to return to Kadatua must inform his family in Kadatua and be forwarded to the village apparatus (village head, village consultative body, and also community empowerment agency) and covid-19 officer. At arrival, then they were picked up at the port of Banabungi. The migrants are then required to carry out quarantine at home for 14 days. In 1 house can be filled by 2 people. The quarantine house used is a resident's house that is empty because it is abandoned by its owner who is also an immigrant.

Home quarantine is strictly supervised by village officials in collaboration with all residents. Each village was trained by Covid Command Post to guard using the shift system morning to evening. This is intended so that all residents who have just returned to their villages can carry out quarantine well. If someone leaves the quarantine house before 14 days will be reprimanded by the village official. But if there are people who do not adhere to the rule, then they are reported to the police.

The implementation of regional quarantine will certainly raise new problems, especially food needs. During the home quarantine on Kadatua Island, food for people undergoing quarantine was provided by their respective families and some were supplied from the village. The food security of the island community will be well maintained because the main livelihoods of the community are fishing and gardening.

There are interesting things made by native people so that the process of quarantine in the region runs well and supports each other with local government policies. The activity is called poago. As explained by one of the indigenous people that Poago begins with prayer activities with village parents and village mosque leaders, gathering an island, on Friday night. The next day on Friday from 6am to 6pm the vehicle was prohibited, and no engine noise was allowed. Poago activities are quite effective in reducing the activities of residents outside the home to minimize direct contact between residents / physical distancing.

4. Discussion

As per Law Number 6 Year 2018 regarding health quarantine, the central and regional governments are responsible for protecting public health from diseases or health risk factors that have the potential to cause health problems through the delivery of health quarantine. Therefore, to prevent the transmission of Covid-19 on Kadatua island, the regional government of South Buton has instructed to all village officials and relevant stakeholders to carry out independent quarantine and monitor every community that will enter the island, especially for those who just returned from overseas. The quarantine focus is carried out at the island's entrance, namely the Port of Baana Bungi and within the island territory in an

integrated manner. The spread of the virus can occur through human travel that moves from one place to another (Wells, Chad R., et al. 2020).

Every person observes the same treatment in organizing island quarantine, getting basic health services according to medical and food needs, it is per the equality function of every citizen (Haggerty, Jeannie, et al, 2018; Smits, C. C. F., et al.2018). Besides, every person is obliged to adhere to the quarantine protocol. The island quarantine is going well and has been successfully implemented with the support of the village apparatus and island community (Blanchet, Karl, et al. 2017). To facilitate regional government and the Kadatua Island community, the role of the sub-district head is pivotal so that coordination can work in synergy and support each other, as well as mediate miscommunication (Weintraub, P., & McKee, M. 2019).

The recent regulations issued by the government are the legalization of quarantine efforts to overcome the transmission of Covid-19. These quarantine efforts can be made at the entrance and the area. As per Law No. 6 of 2018, the quarantine can be in the form of large-scale social restrictions, house quarantine, hospital quarantine, and regional quarantine. However, these outreach efforts can only be made in the condition of public health emergencies determined by the government (Law 6/2018 10), the government needs to innovate legally so that it can implement policies that have good implications for public health²⁹. Consequently, Presidential Decree no 11/2020 is issued³⁰ to determine a public health emergency status for Covid-19 and is a condition for the enactment of Law 6/2018.

The effort made on Kadatua island is categorized as regional quarantine. According to our study finding, the success of the regional quarantine program must be supported by all components of the community, another factor that strongly supports territorial quarantine and physical distancing is the support of local indigenous peoples known as poago (Emerson, K. 2018). .Poago organized by the native people has at least been able to support the physical distancing efforts as advocated by the central government (Massey, Peter, et al. 2009). All stakeholders come together to prevent Covid-19 transmission from entering the island of Kadatua.

In order to achieve a healthy island state, two main domains are needed, including Health Policy and Community Programs. This was agreed by effort done on Kadatua Island, between the local Government Policy was also supported by community programs and strengthened by indigenous peoples in Poago to prevent the transmission rate of Covid-19. In addition, a healthy island must have safe, nutritious food, and good sanitation (Ekici, A., Keskinocak, P., & Swann, J. L. 2014). Kadatua Island has a sufficient supply of animal protein sources from fish and carbohydrate sources from cassava and the community grows their own vegetable needs (BPS Statistics of Regency, 2020). Besides, the Universal Health Coverage in the archipelago should also be enabled to its entire community (Rahmah, Nur, et al. 2020). Under the policy of the central government, schools on Kadatua Island were also closed, according to Wuhan's strategy during the Covid-19 outbreak (Prem, Kiesha, et al. 2020). Some domains also supported the Kadatua island so that it can carry out the regional quarantine.

5. Conclusion

Kadatua Island is registered as one of the regions in South Buton District that can carry out regional quarantine in preventing Covid-19 transmission rates. This capacity can be realized due to several geographical locations that are separated from the mainland as a small island, local government policies that are health-oriented, and supports from citizens and indigenous peoples. Furthermore, Kadatau island has food security making it possible to carry out regional quarantine.

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