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COVID-19 Traveler Policy in Migrant Worker: How it Helped Shape Distinct Clusters During the Early Phases of the Pandemic

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Abstract

Though COVID-19 caught healthcare authorities worldwide off guard, several countries successfully dampened the morbidity and mortality curve by imposing strict biosecurity protocols. We would like to observe the effect of healthcare policies enforced in correlation to the formation of new clusters during early phases of the pandemic, thereby providing statistical justification for laws enforced by authorities. With access to medical records from Udayana University Hospital, a tertiary COVID-19 referral health center, we then observe epidemiological data of patients admitted and their admission date in correlation to dates where major changes in national COVID-19 protocols were established. We found a double distinctive curve that is mainly made of two distinct demographic groups: migrant workers and private employees. We found that during March 2020, when strict travel protocols are yet to be imposed, the viral introduction was mostly carried by returning migrant workers. Sporadic cases emerged, though soon vanishing due to the enforcement of quarantine protocols. Subsequently, in June 2020, a work-from-office setting was adopted, where some offices perform at a capacity higher than allowed. This incites the formation of new office-linked clusters. After this period, no recognizable pattern found due to massive local transmission affecting all layers of society. However, it can be concluded that COVID-19 law does shape the curve, and strict protocols may end the pandemic sooner.

Keywords: COVID-19, Migrant Workers, Health Policy, Private Employee

INTRODUCTION

At the end of 2019, an emerging mysterious pneumonia-like disease reportedly infecting 59 people up to the second week of 2020 was reported on Wuhan.(1) It was estimated that this disease, later named COVID-19, had a reproduction rate (R_0) ranging from 2.24 to 3.58.(2) This reported strikingly high reproduction rate must be of high concern to all elements of society: political superpowers and economic oligarchs up to normal citizens living in distant regions within the country due to its ability to cause massive outbreaks or pandemic in a short period time. Pandemics are not limited to the health sector alone but will have psychological and economic consequences for society. This is especially true during the early stages of a pandemic, when no one is immunized against the pathogen and

almost nothing is known about the virus: how it is transmitted, its ability to adapt in different situations, and its potential to mutate in the desire to survive in unfavorable situations. Various health protocols have been carried out by stakeholders to anticipate the spread of COVID-19, such as lockdown. However, the policies impacted the emergence of mass hysteria, anxiety, fear, and stigma. Research on pandemic protocols in the past has shown the role of psychosocial preparedness in increasing resilience during 'biological disasters' such as large-scale infections. Though there are well-known international guidelines for disaster management in general, specific guidance for pandemic preparedness still needs to be provided, although some countries have formulated their own policies.(3)

Contradictory to the lax measures

implemented in Indonesia, other countries started limiting domestic and international mobility, dampening the morbidity and mortality curve by imposing strict biosecurity protocols.(4) Economy soon contracted, causing stakeholders to not renew a contract with international employees, subsequently creating a wave of returning expatriates into their homeland, which carries health and safety risks with them.(5) Only after this first wave of international cases that the government started taking COVID-19 seriously.(6) Following up on this, the government has begun to increase COVID-19 screening, especially for people who come from countries with an increase in COVID-19 cases. From the screening, it was found that many Indonesian migrant workers who returned to their homeland were positive for COVID-19.(7) Sporadic cases immediately appeared in the areas where these migrant workers returned, although they later disappeared due to the enforcement of the quarantine protocol. The government, through the Coordinating Minister for the Economy, confirmed that there had been an increase in COVID-19 cases in 5 provinces due to the arrival of migrant workers.(8) Subsequently, in June 2020, a work-from-office setting was adapted, where some offices perform at a capacity higher than allowed.(9) This incites the formation of new office-linked clusters. The COVID-19 Handling Task Force team recorded 59 offices in Jakarta as clusters, with 375 people testing positive for the Corona Virus.(10) The expert team leader and spokesperson for the COVID-19 Handling Task Force said that office clusters are currently a concern for the community. To prevent the presence of a new cluster of COVID-19, health protocols need to be encouraged, especially in offices.(11)

In the early days of the pandemic, the Indonesian government viewed COVID-19 as not being responsive enough to anticipate a spike in cases.(12) This edged an ameliorated impression of the destructive potential of COVID-19 and its long-term multisectoral impact. Not only in publicity

and words, the government also lacked the urgency to impose both domestic and international mobility restrictions in fear of potential unlawful due to economic collapse, which was proven to be one of the most effective countermeasures to COVID-19 spread.(6)

The government must carefully issue regulations for public restrictions so that it does not have a negative impact on various sectors. The government's efforts in determining the government's policies and decisions play a big role in forming the distribution, evidenced by the demographically divergent curve corresponding to major changes in COVID-19 laws and policies. Therefore, by conducting this research, the government can determine the effect of the health policies implemented in relation to the formation of new clusters during the initial phase of the COVID-19 pandemic so that it can be used as a guideline for implementing effective regulations for dealing with the COVID-19 pandemic.

METHODS

This research is a descriptive study with a cross-sectional research design. We analyze the secondary demographic profile from electronic medical records of all confirmed COVID-19 patients admitted to Udayana University Hospital from the beginning of the pandemic until the end of June 2020 with two specific profession categories: migrant workers and private employee workers. Descriptive analysis to obtain the mean and median was performed using IBM SPSS Statistics 25 software. The Kolmogorov-Smirnov test was used to test the normality of the study. Ethical approval was issued from the ethical committee of Udayana University with number 1010/UN1422VII14/LT/2020.

Information about subjects is kept highly confidential and is used only in accordance with ethical guidelines. Then, we chronologically compare demographic data in relation to admission date to health policies and changes to national and regional laws relating to COVID-19 transmission

and its effects' mitigation.

RESULT

A total of 125 cases were included in the study, of whom 50 (40%) were migrant workers and 75 (60%) were private

employees admitted to Udayana University Hospital between March to June 2020. The daily admission of migrant workers and private employees at Udayana University Hospital between March to June 2020 can be seen in Figure 1.

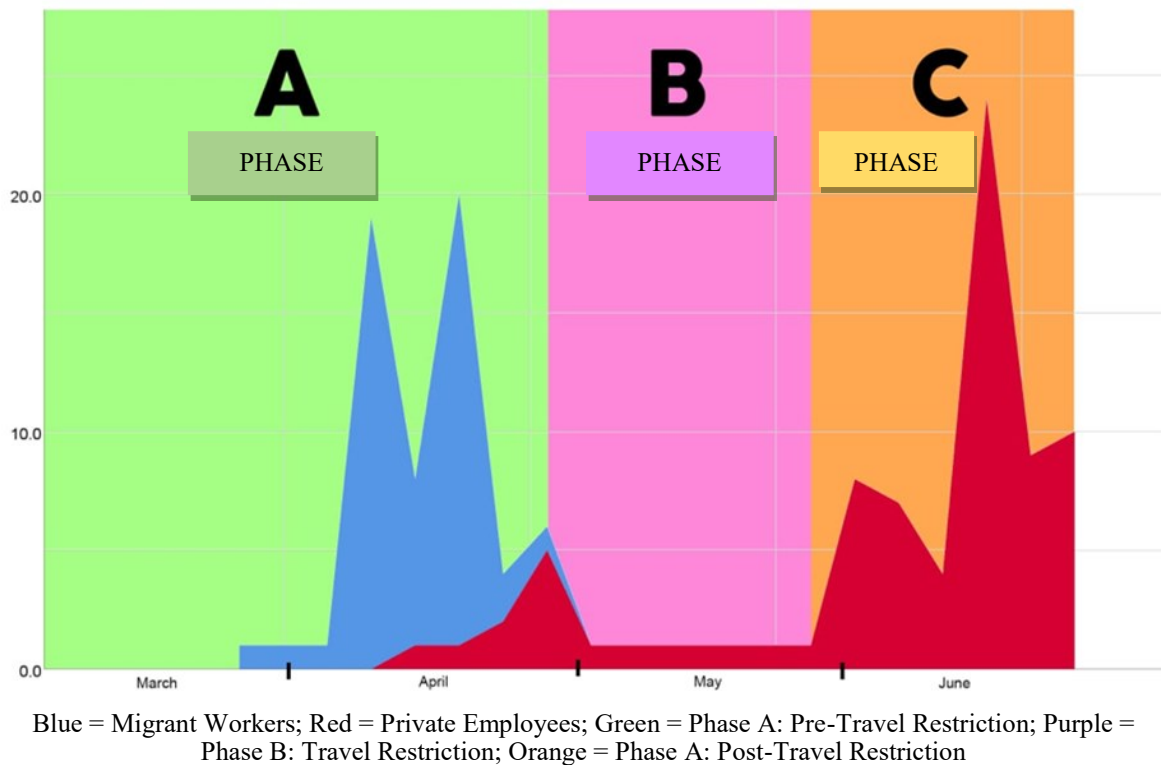


Figure 1. Daily Admission of Migrant Workers and Private Employees at Udayana University Hospital Between March to June 2020 (n = 125)

Figure 1 selectively shows the daily admission of migrant workers and private employees at Udayana University Hospital. There were two distinct curves, marked in blue for migrant workers (mean: 14 April 2020) and red for private employees (mean: 8 June 2020). The curve progression was associated with policies made by all levels of government, starting from city up to national regulations. Distinct colors in the figure's background were made to separate distinct phases attributable to the major or significant changes to laws about COVID-19 restrictions.

Table 1. Distribution of Migrant Workers and Private Employees at Udayana University Hospital Between March to June 2020 (n = 125)

	Migrant Workers	Private Employees	n
Phase A	49	4	53
Phase B	1	8	9
Phase C	0	63	63
n	50	75	125

In phase A, from March 25 to April 25, 2020, the number of COVID-19 patients was 49 migrant workers and 4 private

employees. In phase B, starting April 26–May 23, 2020, the number of patients with migrant workers was 1 and the number of private employees was 8. In phase C, from May 24 to June 30, 2020, there were 63 patients working in private companies, and there were no migrant worker patients.

DISCUSSION

The way to control the spread of an infectious disease is to limit population mobility.⁽¹³⁾ This has been proven from the handling of infectious diseases in the past: population mobility has a very close relationship with the spread of infectious diseases. During the COVID-19 period, limiting population mobility on a large scale was a fairly effective strategy to control the spread of the virus. This strategy has proven successful in various countries and has been able to control the spread of COVID-19. Strategies to limit population mobility depend on the stage of the pandemic. The Indonesian government chose to implement the Large-Scale Social Restrictions (PSBB) policy through the stipulation of Government Regulation (PP) No. 21 of 2020 to deal with the spread of the virus.⁽¹⁴⁾

Though policies are a strong instrument for limiting COVID-19 spread, it must be noted that any policies implemented will need time to show their effects. The idea behind these restrictions is to minimize transmission between large-scaled networks to extinguish the transmission between small-scaled infected networks, such as in a family setting.⁽¹⁴⁾

Phase A: Pre-Travel Restriction

Phase A, labelled in green, was the initial phase of COVID-19 introduction into Indonesia and Bali. The first patient admitted to Udayana University Hospital was a migrant worker on March 25. Soon, the number of international transmissions spiked all over the island, as it is a major international tourist site, and awareness about the virus was still at its lowest. It must be noted that during this phase, Udayana University Hospital only admitted patients manifesting moderate to critical symptoms, whereas those manifesting only

mild to no symptoms were quarantined in a nearby hotel such that they may be evacuated into the hospital if their condition came to an abrupt decline. Direct on-site review during these moments may reveal an exponentially larger number of patients since most migrant workers showed relatively mild to no symptoms.

During this phase, the government issued a circular letter number 443.33/2168/DIKES to all sectors of the society to limit social gatherings and to contain COVID-19.⁽¹⁵⁾ This was followed by mayor's decrees numbered 188.45/617/HK/2020 and 188.45/601/HK/2020 that the city is under emergency status for 10 days to combat COVID-19.⁽¹⁶⁾ This social restriction established phase A was proven effective in lowering the number of COVID-19 cases, leading to the start of phase B.

Research by the Center for Population Research, the National Research and Innovation Agency shows that policies to restrict economic, social, and public activities strictly through government policies to limit population mobility can reduce positive cases of COVID-19. For example, in DKI Jakarta Province, there was a decrease in positive cases of COVID-19 during the implementation of the PSBB. However, positive cases of COVID-19 will increase at the end of each PSBB.⁽¹⁴⁾ The down-top implementation of policies related to controlling the COVID-19 pandemic by the Bandung city government has also proven effective in reducing the positive number of COVID-19 in the area.⁽¹⁷⁾

Phase B: Travel Restriction

Phase B, labelled in purple, was a period of minimum cases within the province. This is attributable to the decrees and circular letters published by the government combined with tight supervision by special 'traditional values' officers locally known as *pecalang*. This contributes largely to increasing community obedience to uphold COVID-19 health protocols.

On April 9, the Indonesian Minister of Transportation issued a travel regulation coded 'PM 18 Tahun 2020', which speci-

fies that passengers within any mode of transportation must be capped at a maximum of 50% of its total capacity except for trains with a maximum of only 35%.⁽¹⁸⁾ Around two weeks after that, on April 25, the regulation (now PM 25 Tahun 2020) was adapted specifically to deal with the massive annual tradition of migrating back to their hometown.⁽¹⁸⁾ The ministry restricts all modes of transportation, especially in areas with a high number of cases at that moment for 4 weeks prior up to 1 week post Eid-al Fitr.

However, this national-scale regulation did not exert a supposed effect. In only ten days post-Eid, the Traffic Directorate of Bali Regional Police reported an influx of more than 18 thousand people into the island.⁽¹⁹⁾ In a matter of days, cases surged into previously unpredictable levels, leading to the start of phase C.

Phase C: Post-Travel Restriction

Phase C, labelled in orange, was a phase where the government aspired to a 'new normal' setting post-Eid. Government allowed companies to implement a work-from-office setting for its workers, though the number of workers per shift and operating hours was limited. However, based on Bali Government's web for PSBB violation denunciation, many private companies trespass on the new regulation.⁽²⁰⁾ These violations skyrocketed the number of cases in the third week of June, where patients admitted were mostly infected in clusters of working private employees.⁽²¹⁾

Data from covid19.go.id shows that every time after a long holiday, there will be an increase in the number of COVID-19. This is similar to the graph in Figure 1, which explains that there has been a significant increase in cases after Eid.⁽¹⁴⁾ In other cases, the easing of policies regarding activity restrictions has resulted in a further increase in positive cases of COVID-19. Such conditions occurred in the city of Bandung after previously there were several sub-districts where 0 cases after the policy easing instead brought back COVID-19 cases. This situation is a dilemma for the government as it faces the transition period

towards a new normal.⁽¹⁷⁾

Significance of Government Intervention

Several regulations showed high effectiveness in reducing the cases were closing all public activities, including schools and companies, stay-at-home requirements, international travel control, and health campaign to the wide community.⁽²²⁾ Any movement to prematurely adopt a 'new normal' setting counteracts facts proven in literature, inciting a new wave of cases. The mortality rate will then increase due to relaxed lockdown restrictions.⁽²³⁾ The evidence that government regulations that limit the mobilization of the community are able to suppress the Covid-19 case can be a reference for the government to implement policies at the right time so that it can prevent the transmission of COVID-19 more massive. Population mobility and COVID-19 transmission are positively correlated, according to data on the trajectory of population numbers confirmed for the disease in response to various measures limiting population movement. Due to increased population movement, the rate of COVID-19 always rises following extended holidays. The government's many efforts to stop the spread of COVID-19 have yet to be carried out as effectively as they should have been. However, the COVID-19 pandemic's government policies at least succeeded in altering population mobility trends and patterns.⁽¹⁴⁾ A systematic review regarding restrictions on people's mobility with COVID-19 proves that public health restrictions, especially orders to stay at home, significantly impact on transmission prevention behavior. Further research is needed to understand how to effectively deal with pandemic fatigue and to support a safe return to normal, everyday behavior.⁽²⁴⁾

CONCLUSION

In conclusion, both literature and on-site study proved that policies intervening in normal societal activities were significant in terms of mitigating COVID-19 spread and its potential collateral effects. Policies and governmental decrees played a big role in shaping the spread, proven by

demographically distinct curves which correspond to major changes in COVID-19 laws and policies.

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CONFLICTS OF INTEREST STATEMENT

This paper did not receive nor use

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ETHICS

All data are from secondary data published by the government which can be openly accessible sources and the ethical approval was issued from the ethical committee of Udayana University with number 1010/UN1422VII14/LT/2020.

CONTRIBUTION DETAILS :

Table 2. Summary of work done by the contributors

	Contributor 1	Contributor 2	Contributor 3	Contributor 4	Contributor 5	Contributor 6	Contributor 7
Concepts	V	V					V
Design				V		V	
Definition of intellectual content			V		V		
Literature search	V	V	V			V	V
Manuscript preparation	V	V				V	
Manuscript editing			V	V	V		
Manuscript review	V			V	V		V
Guarantor	V						

Saktivi Harkitasari developed conceptualization and supervised the project. Richard Christian Suteja contributed to developing conceptualization and writing the original draft. Giovanca Verentzia Purnama contributed to writing original draft and manuscript editing. Both I Komang Hotra Adiputra and Jerry contributed to the review and editing of the final version of the manuscript. I Gede Purna Weisnawa contributed to writing the original draft and manuscript preparation. Cokorda Agung Wahyu Purnamasidhi contributed to the conceptualization and review the manuscript.

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