

# HASIL CEK\_Sulistyawati Sulistyawati, Tri Wahyuni Sukei, Herman Yuliansyah, Arfiani Nur Khusna and Surahma Asti Mulasari

*by* Sulistyawati Sulistyawati, Tri Wahyuni Sukei, Individual Attentiveness  
In Vector Control Should

---

**Submission date:** 25-Jan-2023 09:01AM (UTC+0700)

**Submission ID:** 1998844912

**File name:** Individual\_attentiveness\_in\_vector\_control\_should.pdf (194.43K)

**Word count:** 1723

**Character count:** 9732



## OPEN ACCESS

EDITED BY  
Al Asyary,  
University of Indonesia, Indonesia

REVIEWED BY  
Meita Veruswati,  
Universitas Muhammadiyah Prof. Dr.  
Hamka, Indonesia

\*CORRESPONDENCE  
Sulistiyawati Sulistiyawati  
sulistiyawati.suyanto@ikm.uad.ac.id

**2**  
SPECIALTY SECTION  
This article was submitted to  
Health Economics,  
a section of the journal  
Frontiers in Public Health

RECEIVED 27 September 2022

ACCEPTED 20 October 2022

PUBLISHED 02 November 2022

## CITATION

Sulistiyawati S, Sukesi TW, Yuliansyah H,  
Khusna AN and Mulasari SA (2022)  
Individual attentiveness in vector  
control should be strengthened during  
and after the COVID-19 pandemic.  
*Front. Public Health* 10:1055509.  
doi: 10.3389/fpubh.2022.1055509

## COPYRIGHT

© 2022 Sulistiyawati, Sukesi,  
Yuliansyah, Khusna and Mulasari. **1**  
This is an open-access article distributed  
under the terms of the Creative  
Commons Attribution License (CC BY).  
The use, distribution or reproduction  
in other forums is permitted, provided  
the original author(s) and the copyright  
owner(s) are credited and that the  
original publication in this journal is  
cited, in accordance with accepted  
academic practice. No use, distribution  
or reproduction is permitted which  
does not comply with these terms.

# Individual attentiveness in vector control should be strengthened during and after the COVID-19 pandemic

Sulistiyawati Sulistiyawati<sup>1\*</sup>, Tri Wahyuni Sukesi<sup>1</sup>,  
Herman Yuliansyah<sup>2</sup>, Arfiani Nur Khusna<sup>2</sup> and  
Surahma Asti Mulasari<sup>1</sup>

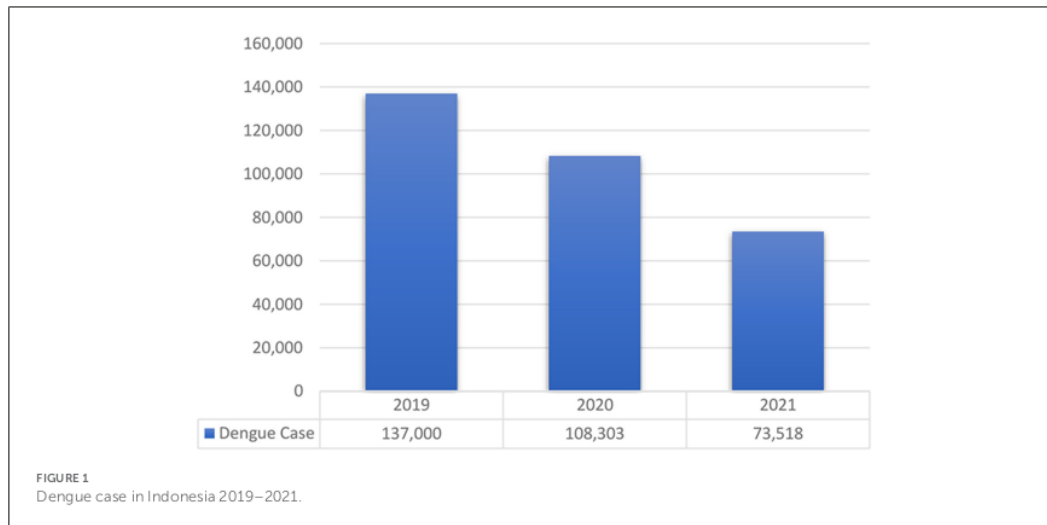
<sup>1</sup>Faculty of Public Health, Universitas Ahmad Dahlan, Yogyakarta, Indonesia, <sup>2</sup>Department of Informatics, Faculty of Industrial Technology, Universitas Ahmad Dahlan, Yogyakarta, Indonesia

## KEYWORDS

COVID-19, dengue, community resilience, vector control, awareness

COVID-19, discovered for the first time in Wuhan, China, at the end of 2019, has spread widely worldwide and has been declared a global pandemic. Due to the infectious nature of the disease, the WHO takes preventive measures to limit its spread by limiting human movement and interaction, which should be implemented thoroughly in all countries (1). This policy has a positive impact on reducing the spread of COVID-19. Still, it harms the control of other diseases that have traditionally been carried out through direct human-to-human interaction, such as dengue prevention. The COVID-19 control policy has at least two implications for dengue vector control in Indonesia, (1) the social distancing policy makes larva monitoring activities that were originally carried out by meeting resident's door to door unable to work, and (2) budget reorientation focused on COVID-19 then make the dengue program not optimal. Accordingly, this opinion emphasizes the importance of strengthened societal capacity in dengue vector control as an implication of COVID-19 disease.

For decades, the dengue prevention program in Indonesia has been carried out through community empowerment, with the larva monitoring cadre going door to door (2). This attempt appears to have usually been running prior to the COVID-19 pandemic due to the raised concerns that dengue outbreaks could occur at any time. So, the dengue prevention program is an effort for early case detection. Several studies have found a link between COVID-19 and the number of dengue cases in some regions (3, 4), including Indonesia. They stated that dengue cases are expected to be lower in 2020 compared to the previous year (4). The Indonesia Ministry of Health predicted that dengue case tends to be lower during the COVID-19 pandemic, as presented in Figure 1 (5, 6). However, this situation must be addressed because it is unclear whether this decrease was caused by mobility restrictions or the public's health-seeking behavior during the pandemic. People are concerned about being diagnosed with COVID-19, so they avoid getting medical checking.



Since its discovery in Indonesia in 1968, the government has prioritized dengue case management through dengue vector control. The program was carried out by prioritizing observation and direct action at the in-household level, which included reporting data from field observations that were manually tiered from the bottom to the upper level. Furthermore, to maximize efficiency, the Indonesian government prioritizes community participation in vector control through larva monitoring cadre activity (2, 7, 8). This activity generates larvae indices data, which policymakers use to prioritize dengue control interventions. However, the vector control implemented thus far has proven to be counter-productive when COVID-19 occurs, and restrictions on social interaction must be imposed. As a result, monitoring larvae from house to house cannot be done efficiently. The absence of information on the presence of vectors in the community means that the dengue situation in the community cannot be known, which impacts the health system's preparedness in the event of an outbreak. This is understandable, given that previous research has shown that public awareness of dengue symptoms in some Indonesian communities was insufficient (7).

Individuals play an important role in vector control. The individual is the smallest constituent of social structures in society, and their actions will be a collective to a specific purpose of disease prevention, primarily through active participation in programs. This individual's concern and awareness, on the other hand, are influenced by his perception and knowledge of the specific issue (9, 10). However, their knowledge and attitude will determine their involvement in vector control, as stated in previous studies (11, 12). As a result, improving people's knowledge is essential to strengthen individual capacity.

So far, many educational programs have been carried out by the Indonesian government through health promotion on the necessity of individual involvement in dengue vector control. Still, due to the lack of evaluation of the results of these promotions, their effectiveness is unknown. This is because, despite the fact that the vector control program for dengue prevention has been in place for some time, a study in Malang City, East Java, found that only around 30% of the community had good knowledge, while only 3.2% among society had good prevention behavior (13).

This is a consideration that improving individual capacity is required by first assessing the state of knowledge and public awareness, as the community may already be saturated with dengue and the information that goes with it. However, this is a scary situation because, based on experience when COVID-19 attacked, it was demonstrated that the community and policy stakeholders were not standing to deal with the double burden of dengue and COVID-19.

## Author contributions

SS was working on the concept, writing the first draft, and finalizing it. TS, HY, AK, and SM were reviewing and commenting on the draft. All authors contributed to the article and approved the submitted version.

## Funding

This article is part of a larger study funded by the Ministry of Education and Culture of the Republic of

Indonesia under grant number 030/PB.PDUPT/BRIn.LPPM/VI/2022.

## 1 Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## References

1. WHO. *Updated WHO Recommendations for International Traffic in Relation to COVID-19 Outbreak*. Web (2020). Available from: <https://www.who.int/news-room/articles-detail/updated-who-recommendations-for-international-traffic-in-relation-to-covid-19-outbreak> (accessed on September 16, 2022).
2. Sulistiyawati S. *Dengue Prevention and Control in Indonesia: A case study in Yogyakarta City*. (2022). Sweden: Umeå University Umeå University.
3. Chen Y, Li N, Lourenço J, Wang L, Cazelles B, Dong L, et al. Measuring the effects of COVID-19-related disruption on dengue transmission in southeast Asia and Latin America: a statistical modelling study. *Lancet Infect Dis*. (2022) 22:657–67. doi: 10.1016/S1473-3099(22)00025-1
4. Sharma H, Ilyas A, Chowdhury A, Poddar NK, Chaudhary AA, Abdul S, et al. Does COVID - 19 lockdowns have impacted on global dengue burden? A special focus to India. *BMC Public Health*. (2022) 22:1–23. doi: 10.1186/s12889-022-13720-w
5. Widi S. *Ada 73.518 Kasus Demam Berdarah Dengue di Indonesia pada 2021*. DATA INDONESIA (2022). Available from: <https://dataindonesia.id/ragam/detail/ada-73518-kasus-demam-berdarah-dengue-di-indonesia-pada-2021> (accessed on October 18, 2022).
6. Mukaromah VF. *Melihat Kasus DBD pada 2019 dan 2020 Saat Pandemi Virus Corona Halaman all - Kompas.com*. KOMPAS (2020). Available from: <https://www.kompas.com/tren/read/2020/06/22/193500165/melihat-kasus-dbd-pada-2019-dan-2020-saat-pandemi-virus-corona?page=all> (accessed on October 18, 2022).
7. Sulistiyawati S, Astuti FD, Umniyati SR, Satoto TBT, Lazuardi L, Nilsson M, et al. Dengue vector control through community empowerment: lessons learned

## Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

from a community-based study in Yogyakarta, Indonesia. *Int J Environ Res Public Health*. (2019) 16:1013. doi: 10.3390/ijerph16061013

8. Sulistiyawati S, Mulasari SA, Sukei TW. Understanding community involvement on Dengue prevention in Sleman, Indonesia: A free listing approach. *J UOEH*. (2020) 42:231–6. doi: 10.7888/jueh.42.231

9. Majid U, Wasim A, Bakshi S, Truong J. Knowledge, (mis-)conceptions, risk perception, and behavior change during pandemics: A scoping review of 149 studies. *Public Underst Sci*. (2020) 29:777–99. doi: 10.1177/0963662520963365

10. Al-Hanawi MK, Angawi K, Alshareef N, Qattan AMN, Helmy HZ, Abudawood Y, et al. Knowledge, attitude and practice toward COVID-19 among the public in the kingdom of saudi arabia: a cross-sectional study. *Front Public Heal*. (2020) 8:1–10. doi: 10.3389/fpubh.2020.00217

11. Sayavong C, Chompikul J, Wongsawass S, Rattanapan C. Knowledge, attitudes and preventive behaviors related to dengue vector breeding control measures among adults in communities of Vientiane, capital of the Lao PDR. *J Infect Public Health*. (2015) 8:466–73. doi: 10.1016/j.jiph.2015.03.005

12. Alobuia WM, Missikpode C, Aung M. Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information. *Ann Glob Heal*. (2015) 8:1654–63. doi: 10.1016/j.aogh.2015.08.013

13. Rakhmani AN, Limpanont Y, Kaewkungwal J, Okanurak K. Factors associated with dengue prevention behaviour in Lowokwaru, Malang, Indonesia: A cross-sectional study. *BMC Public Health*. (2018) 18:1–6. doi: 10.1186/s12889-018-5553-z

# HASIL CEK\_Sulistyawati Sulistyawati, Tri Wahyuni Sukesi, Herman Yuliansyah, Arfiani Nur Khusna and Surahma Asti Mulasari

---

## ORIGINALITY REPORT

---

11%

SIMILARITY INDEX

11%

INTERNET SOURCES

12%

PUBLICATIONS

10%

STUDENT PAPERS

---

## PRIMARY SOURCES

---

1

[www.hsrc.ac.za](http://www.hsrc.ac.za)

Internet Source

9%

2

[intrepid-cost.ics.ulisboa.pt](http://intrepid-cost.ics.ulisboa.pt)

Internet Source

2%

---

Exclude quotes  On

Exclude bibliography  On

Exclude matches  < 2%