Evaluation of the implementation of the dengue hemorrhagic fever eradication program (P2DBD) during the cOVID-19 pandemic (study at the Sememi Health Center, Benowo district, Surabaya City)

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Abstract

Background: the Dengue Eradication Program is a government initiative to reduce dengue cases through preventive measures aimed at mosquitos. All activities in the various health sectors were restricted during the COVID-19 pandemic. The purpose of this study is to assess the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center in Surabaya.

Materials and Methods: this was a qualitative study with an evaluative approach. Key informants were identified using purposive sampling. The data was gathered through in-depth interviews and observations. The results were analyzed by evaluating the program's implementation using the system approach method.

Results: it is well known that the program evaluation results are positive. The results of the input variables meet the minimum standards that have been established. The outcome of the process variables is less than ideal. Dengue prevention counseling, mosquito net eradication, monitoring, and evaluation activities were not carried out. All activities that make crowds impossible to carry out. The assessment of output variables is based on the number of larva-free days and dengue cases in the good category.

Conclusion: the input and output variables are satisfactory in accordance with the government's policy provisions and should be maintained. To improve the program's effectiveness, process variables must be improved, specifically increasing the implementation of counseling activities related to dengue prevention, eradication of mosquito nets, and monitoring and evaluation activities.

Introduction

According to the WHO, Indonesia has the highest number of dengue cases in Southeast Asia.[1] The number of dengue cases in Indonesia decreased in 2020 compared to 2019. In January-July 2020, there were a total of 71,633 cases of dengue fever, while in 2019 there were 112,95.[2] However, there was a difference in 2020 compared to last year. While dengue cases usually peak in March, in 2020 the number of dengue cases will increase until July. The province of East Java is one of the provinces in Indonesia with the highest incidence of dengue fever. Dengue cases in the East Java region increased from 2017 to 2019.[3] In 2019, the incidence of dengue in East Java was 7 cases per 100,000 people.[4] Population density,[5] population mobility, urbanization,[6] economic growth, community behavior, climate change,[7] environmental sanitation

and access to clean water affect the spread of dengue cases in East Java.[4] Surabaya, the capital of East Java province, has a high incidence of dengue, with 321 cases reported in 2018.[8]

Sememi Public Health Center (PHC) is a health center located in Benowo District, Surabaya. Kandangani Village, Sememi Village, Oso Wilangon Pond Village and Romo Kali Sari Village are all within the service area of Sememi PHC. In 2020, the area of the area was 23.57 km2 and the population density was 2878 in/km2, or approximately 69,938 people.[9–11] It is known that the IR level of Sememi Health Center is 6.26-16.3, there were 5 cases of dengue disease in 2018.[8] According to Surabaya City Health Office, eight people tested positive for dengue in 2019,[4] and 10 people in Sememi Health Center in 2020 and during the COVID-19 pandemic.[9] As a result, Sememi Health Center became the health center with the highest number of dengue cases in Surabaya. The annual increase in dengue cases in Sememi Health Center must be monitored and treated immediately to reduce the risk of dengue in the surrounding area.

Surabaya Mayor's Circular No. 360 of 2020 Regarding Enhanced Vigilance Against the Corona Virus Disease 19 (COVID-19) in Surabaya, all residents of the city of Surabaya are advised to stop their activities related to the forces and instead act. use online media to prevent the spread of COVID-19 in Surabaya. This causes suboptimal functioning of the Dengue Hemorrhagic Fever Eradication and Control Program in Sememi Health Center due to obstacles, especially lack of health services in Sememi Health Center. Therefore, during the COVID-19 pandemic, there is a need to further investigate the implementation of the Dengue Hemorrhagic Fever Elimination and Control Program at the Sememi Health Center. The endless problem of dengue has a negative impact on community productivity and requires an increase in the health budget to combat the disease. Based on the findings, an evaluation of the Dengue Hemorrhagic Fever Eradication and Control Program at the Sememi Health Center in Surabaya is required. The purpose of this study is to identify the source of the problem and to make recommendations to solve the dengue problem in Sememi Health Center in Surabaya.

Materials and Methods

This study is a qualitative descriptive study, which aims to provide a systematic, factual, and accurate picture of the incidence of dengue hemorrhagic fever during the COVID-19 pandemic. The study design uses an evaluative approach by collecting data on policy implementation whose conclusions are in the form of recommendations that can be maintained, improved, or even dismissed. The subjects in this study were taken by purposive sampling, consisting of the Head of PHC, coordinator of the Control of Dengue Hemorrhagic Fever program, Jumantik cadres (the persons responsible for counting the number of larvae in the residential area) from each village in The Sememi Health Center who have a minimum length of work as cadres of 1 year.

Results

Input on the P2DBD of Sememi public health center

The Dengue Hemorrhagic Fever Eradication and Control program is being implemented at Sememi PHC by an officer with a background in Environmental Health DIII Education. The Sememi Health Center's Dengue Hemorrhagic Fever Eradication and Control officers have not been trained in the last year. According to the results of interviews with the program's coordinator, the most recent Dengue Hemorrhagic Fever Eradication and Control training was obtained in 2010. The Dengue Hemorrhagic Fever Eradication and Control officers at the Sememi Health Center hold multiple positions, including the person in charge of DHF under the supervision of the Sememi Health Center's Head of P2P (Disease Prevention and Control) and the Head of Sanitation.

Health Operational Assistance funds and Regional Income and Expenditure Budget funds are used to implement the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center. The funds used to implement the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center were used as planned. The funds obtained are greater than the funds used for operational activities, according to the results of interviews with the person in charge of the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center.

Process on the dengue hemorrhagic fever eradication and control program at Sememi public health center

Adult mosquito vectors are controlled using fogging in accordance with the DHF control manual. Several factors indicate suitability, including reports of dengue sufferers from hospitals/PHC, PHC officers conducting Epidemiological Research in the environment where dengue sufferers live within one week before, if a fever sufferer is found without a clear cause, a Tourniquet test is performed, a larvae examination is conducted in a house/building located 100 meters from the patient's residence, and reporting the results of Epidemiological Research to the Health Office.[12]

The mosquito larvae vector control activities at the Sememi Health Center are not qualified because they do not carry out activities completely, namely their implementation, which is not carried out on a weekly basis during the pandemic. The material presented in the health counseling by the Sememi Health Center is in accordance with the guidelines for controlling dengue fever, according to the results of the evaluation of health counseling activities at the PHC. The material discusses the regional dengue fever situation as well as efforts to prevent dengue fever independently.

Due to work time constraints during the pandemic, the PHC did not monitor and evaluate the results of the Dengue Hemorrhagic Fever Eradication and Control program in 2020, according to the results of the Evaluation of Monitoring and Evaluation Activities at the PHC. In monitoring and evaluation activities, the Sememi Health Center only recapitulates the results of Jumantik cadres' examination of larvae and reports the results to the City Health Office once a month.

Output on the P2DBD at Sememi public health center

The output variables in this study are the larva-free number and the incidence of dengue fever in the Sememi health center work area. The larva-free number in the Sememi PHC Working Area in 2020 has met the standard (>95%). Based on the results of interviews with the person in charge of the Dengue Hemorrhagic Fever Eradication and Control program, in May - June, no inspection of larvae to residents' homes was carried out due to the COVID-19 pandemic which required residents to limit associations in eradicating the chain of transmission. The incidence of Dengue Hemorrhagic Fever in the Sememi PHC Working Area shows that there was a decrease in dengue cases at the Sememi Health Center in 2019-2020.

Discussion

Input on the dengue hemorrhagic fever eradication and control program

Man (human resources) on dengue hemorrhagic fever eradication and control program

According to the evaluation findings, the human resources (man) in the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center who met the requirements were variables in quantity and level of education of the person in charge of the Dengue Hemorrhagic Fever Eradication and Control program. Those who are not qualified are affected by training and workload. The quantity of Dengue Hemorrhagic Fever Eradication and Control program managers has met the requirements with one officer, according to the results of the evaluation of the quantity of Dengue Hemorrhagic Fever Eradication and Control program implementing officers. However, there is an unqualified workload in terms of quality because, in addition to being the person in charge of the Control of Dengue Hemorrhagic Fever program under the responsibility of the head of Disease Prevention and Control, he is also the head of sanitation at the Sememi Health Center. Workload, according to Minister of Home Affairs Regulation No. 12 of 2008, is the amount of work that must be carried out by a position / organizational unit and is the result of a multiplication of work volume and time norms. [13] A program's responsibility is an external factor that influences workload. [14] Employee workload will increase if employees are given more responsibility without increasing their workload. [15] The education level variable, the Control of Dengue Hemorrhagic Fever program implementation officers demonstrate that they have met the D3 Health of study program's minimum requirements. The education requirements of Control of Dengue Hemorrhagic Fever officers are regulated in the Regulation of the Minister of Health of the Republic of Indonesia number 83 of 2019 concerning Registration of Health Workers, which states that health workers are anyone who devotes themselves to the health sector and has knowledge and / or skills gained through education in the health sector, which for certain types requires authority to carry out health efforts.[16] Previous research has shown that education level has a positive influence on performance, implying that the higher the level of education obtained, the better the performance.[17] Officers with a high level of education will also have more knowledge and skills.[18] The training evaluation results revealed that the Dengue Hemorrhagic Fever Eradication and Control program implementation officers were not qualified because there had been no training in the previous year. According to the findings of interviews with officers implementing the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center, he last received training from the Surabaya City Health Office in 2010. This study found that training has a positive and significant impact on medical personnel performance.[19] This means that the more training a medical professional receives, the better their performance. According to this statement, training should be conducted on a regular basis to broaden the knowledge, attitudes, and skills of officers implementing the Dengue Hemorrhagic Fever Eradication and Control program. Training methods must also be considered considering the organization's work environment and goals. A successful organization invests in training more than any other organization.[20]

Money (funds) in the dengue hemorrhagic fever eradication and control program

The Sememi Health Center's evaluation of the source of funds and allocation of funds met the requirements, namely the availability of sources of funds and the use of funds in accordance with the plan. According to the findings of interviews with Dengue Hemorrhagic Fever Eradication and Control program implementation officers, the funds obtained came from the Health Operational Assistance for counseling implementation and the Regional Income and Expenditure Budget for other dengue fever eradication activities. However, during the COVID-19 pandemic, Health Operational Assistance funds obtained from the Surabaya City Health Office were diverted for COVID-19 management, resulting in no counseling implementation that year. The funds obtained are sufficient for the program's implementation in 2020.

The COVID-19 pandemic has an impact on the source of funds for the implementation of the Dengue Hemorrhagic Fever Eradication and Control program by diverting Health Operational Assistance funds for dealing with COVID-19, preventing community counseling from being implemented. Furthermore, the implementation of flick checks performed by Jumantik cadres every week is not carried out, resulting in an expenditure of funds of Rp. 28,200 / cadre for each activity to be zero. This is one of the reasons for the surplus funds for the Dengue Hemorrhagic Fever Eradication and Control program. The PHC accounts for the funds spent by carrying out activities that have been approved with the assistance of one officer.

Machine (tool) in the dengue hemorrhagic fever eradication and control program

The evaluation of the fogging activity machine did not meet the requirements because it lacked a four-wheeled vehicle. In fact, the Dengue Hemorrhagic Fever Control Module explains that each piece of equipment required serves a specific purpose. Officers' 2-wheeled vehicles are currently used to transport fogging tools and materials. This will make mobilizing officers to the operation site with an area of 23.76 km2 more difficult, as well as increasing the workload of fogging officers in carrying out their duties. Furthermore, transporting large and numerous tools and materials with a two-wheeled vehicle risks the tools and materials falling, causing accident officers to inflict physical, material, and even death losses.

The Dengue Hemorrhagic Fever Eradication and Control program's implementation officer at Sememi PHC performs maintenance in accordance with standard operating procedures (SOP), namely cleaning the equipment after fogging implementation. The Surabaya City Health Office provides all fogging equipment at the PHC but cleaning the fogging tool with a carburetor cleaner requires a budget from the program's coordinator. Tools for program implementation are critical in assisting the activity officer in completing his task. The completeness of the officers' equipment will increase their work motivation and productivity. Officers' motivation and productivity will suffer because of a lack of equipment.[21,22]

Material in the dengue hemorrhagic fever eradication and control program

The results of the evaluation of the materials used in the implementation of fogging and sowing of larvicide powder have met the requirements. In the implementation of fogging the insecticide used is alphacypermethrin (Fendona 30 EC). The use of the insecticide aphacypermethrin 30 EC at a dose of 75 ml / ha can make mosquitoes faint / die by 79.2% in 30 minutes, most in malathion by 100%.[23] Similar studies have been conducted by Vitylingam, that the use of fendona to lower the number of larvae can be effective on the 11th day equal to the

use of malathion.[24] Although the use of malathion is more deadly to the Aedes mosquito vector than the use of fendona, it is necessary to rotate in the use of malathion or other insecticides so as not to cause resistance to mosquito vectors. This is because according to WHO (2012) resistance occurs when the vector cannot be killed by a standard dose of insecticide or is able to avoid contact with insecticides through evolutionary phenomena.[25] Sememi PHC rotates insecticides once every 5 years and before using fendona, the insecticide used is 95% malathion.

Method in the dengue hemorrhagic fever eradication and control program

The evaluation results for the instructions/guidelines in the implementation of the P2DBD program show that the Sememi Health Center already has all standards-compliant guidelines. The guidelines are the Circular Letter of the Mayor of Surabaya number 443 of 2020 concerning the Vigilance of Dengue Hemorrhagic Fever (DHF) outbreaks and the Indonesian Dengue Fever Control Guidelines. In addition, the Surabaya City Health Office provides promotional materials in the form of DHF leaflets and DHF posters. Based on the results of interviews with Jumantik cadres, DHF posters and leaflets are distributed by the PHC once a year to make it easier for Jumantik cadres to convey messages related to dengue management by distributing them in every activity formed through consensus meetings in the village, namely Posyandu (integrated service post) for toddlers and the elderly during larvae checks every week.

Market in the dengue hemorrhagic fever eradication and control program

The PHC's Dengue Hemorrhagic Fever Eradication and Control Program has four urban villages as its working area. However, the activity's target has its own specifications because, during program implementation, it must be right on target in terms of the program's effectiveness and efficiency. The target activities in the Dengue Hemorrhagic Fever Eradication and Control program mentioned in this study are fogging activities, mosquito net eradication, and health counseling.

The evaluation of the fogging implementation target reveals that it is in accordance with the standards, namely dengue sufferers and surrounding houses/buildings within a radius of 200 meters. According to the findings of interviews with Jumantik cadres, the target of fogging is a radius of 200 meters from DHF patients, as proven by laboratory results from hospitals. This is beneficial in fogging implementation because Jumantik cadres can supervise fogging officers during the spraying process.

Evaluations of the mosquito net eradication targets show that they are in accordance with the standards, namely all places that have the potential to reduce Aedes aegypti mosquitoes both inside and outside the house. According to the findings of interviews with Jumantik cadres, the targets of mosquito net eradication driving are bathroom tubs, flower vases, buckets, and containers that can be filled with water.

The evaluation of the target of counseling activities demonstrates that they have met the requirements, namely all residents in the PHC work area. According to Article 28 H paragraph (1) of the 1945 Constitution and Law No. 36 of 2009, everyone has the right to a prosperous life in birth and mind, as well as the right to health care. This can be interpreted as the government regulating that all citizens, regardless of status, are entitled to health services, particularly counseling to gain insights into dengue management.

Processes in the dengue hemorrhagic fever eradication and control program

Adult mosquito vector control

The evaluation of adult mosquito vector control (fogging) results shows that the PHC carried out fogging in accordance with the operational standard for fogging implementation procedures. According to the findings of interviews with Dengue Hemorrhagic Fever Eradication and Control program implementation officers and Jumantik cadres, even though the COVID-19 pandemic caused crowd restrictions, if there are cases and the results of epidemiological investigations are positive, PHC still carry out fogging to reduce dengue disease spread. Adult mosquito vector control at the Sememi Health Center is effective, and it should be maintained. If the results of officers' epidemiological control are positive, fogging activities must be carried out. Fogging officers are required to follow health protocols and encourage the public to do the same during spraying so that they can still handle dengue cases with a low risk of COVID-19 transmission.

Mosquito larva vector control

Based on the findings of the evaluation related to the mobilization of mosquito net eradication, they continue to fall short of the requirements for carrying out these activities, namely not observing all water media, particularly in the community's homes, and not doing so on a weekly basis. This is due to the impact of the COVID-19 pandemic, which has prompted the government to urge the public to limit crowd activities to break the chain of transmission of the COVID-19 virus.

According to the findings of interviews with Jumantik cadres, many residents refused to have their homes checked for the presence of larvae for fear of the examiner becoming infected with COVID-19 and contracting the disease. Furthermore, the frequency of driving activities for mosquito net eradication has been reduced from four times per month to two times per month. The City Health Office determined that mosquito net eradication should be suspended from May to July to reduce the incidence of disease caused by the COVID-19 virus in Surabaya. Furthermore, the COVID-19 pandemic has an impact on regular meetings in each sub-sub district to discuss mosquito net eradication. This can be overcome through PHC, which is normally done in person, but during the COVID-19 pandemic, it is done online or through a WhatsApp group.

Sememi PHC's innovation in driving PSN in 2019 is gogonlevi (barrel roll, lavenderization, and fishzation). The barrel roll in question is a cleaning activity for the barrel, which has the potential to become a mosquito breeding ground. Lavenderization (mass lavender planting) is the practice of planting lavender plants in front of people's homes to repel mosquitos. Several lavender plant studies concluded that lavender plants are effective at repelling mosquitoes within 5 minutes.[26] Meanwhile, fishzation (mass fish raising) is the practice of delivering betta fish to residents' homes so that they can consume mosquito larvae.

Counseling activities were found to be ineligible after an evaluation because the PHC did not provide counseling to the community in 2020. The COVID-19 pandemic prevents crowd activities from breaking the chain of disease transmission. Furthermore, funds obtained from the Health Operational Assistance fund for the implementation of counseling were diverted to overcome COVID-19.

Monitoring and evaluation activities

In this study, monitoring and evaluation activities are part of

the components of the Dengue Hemorrhagic Fever Eradication and Control program process with the implementation of monitoring and evaluation every 3 months of PHC by the District / City Health Office, there is a recapitulation of the results of the larvae examination by Jumantik on the Dengue Hemorrhagic Fever Eradication and Control program implementation officers, then the PHC reports the results to the District / City Health Office.

The results of the evaluation of monitoring and evaluation activities show that the implementation is not qualified. Based on the results of interviews with Dengue Hemorrhagic Fever Eradication and Control program implementation officers, in 2020 there were no monitoring and evaluation activities by the Surabaya City Health Office at the PHC. This is due to the occurrence of the COVID-19 outbreak in Surabaya which is the focus to be considered. The COVID-19 outbreak in Surabaya is a top priority at the Surabaya City Health Office so that all resources are deployed to solve the problem.[27]

Output in the dengue hemorrhagic fever eradication and control program

Larva-free numbers

Based on the results of the evaluation of the Larva-Free Number in 2020 in the work area of the Sememi Health Center, it has met the 95% standard. Although overall the Sememi PHC area has met the standards, there is one village that still does not meet the 95% standard in 2020, namely Sememi village. According to the Dengue Hemorrhagic Fever Eradication and Control program implementation officer, the low achievement of the Larva-Free Number in Sememi village was caused by the total population density in the village as many as 38,547 people with an insufficient number of Jumantik cadres of only 345 cadres.[4] In addition, it was also caused by counseling that was not carried out during the COVID-L 9 pandemic due to crowd restrictions and funds from the Health Operational Assistance fund which were diverted to COVID-19 mitigation. Dengue control cannot be carried out by one party alone but there must be collaboration between the government and the community. Community empowerment in dengue control is important to be carried out to build programs with the community. [28]

Incidence of dengue hemorrhagic fever

In 2020, the number of dengue fever cases in Sememi Health Center was 13. This reduced dengue cases in Sememi Health Center by 8 cases in 2019. Based on the results of the DHF morbidity assessment, it met the requirements. The results of the process evaluation show that the introduction of mosquito nets, advice and activities on monitoring and evaluation still do not exist, but there were only 13 cases of dengue compared to 2019.[29] This is related to the policy introduced in 2019. To reduce the mobility of the population during the COVID-19 pandemic, the government recommended that all activities, both study and work, be done at home.

Population mobility is a factor that can affect the spread of dengue. Residents who leave the city have a 17-fold increased risk of dengue compared to residents who do not leave the city.[23,30] Aedes aegypti mosquitoes are not only found in the home, but public places frequented by residents, such as children playing around the house and used bottles, are places where Aedes aegypti mosquitoes are needed. [31]

Evaluation of inputs, processes, and outputs in dengue hemorrhagic fever eradication and control program

The results of the overall evaluation of inputs, processes and outputs show that the implementation of the Dengue Hemorrhagic Fever Elimination and Control Program in Sememi Health Center is good, but the process variables are still relatively incomplete. This is due to external issues, namely the COVID-19 pandemic, which has caused some operations to be suspended.

The COVID-19 pandemic has prompted the government to issue policies to limit crowd activities to break the chain of transmission of disease caused by the COVID-19 virus. All agencies are prioritizing the resolution of the outbreaks of COVID-19 because the disease has not yet found an adequate treatment.

Conclusions

The input variables in the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center are overall good and in accordance with the minimum standards that must be owned.

The process variables in the Dengue Hemorrhagic Fever Eradication and Control program at Sememi PHC showed suboptimal results in its implementation, both in the eradication of mosquito nets mobilization activities, counseling, monitoring, and evaluation activities.

The output variables in the Dengue Hemorrhagic Fever Eradication and Control program at the Sememi Health Center generally showed good results, due to the policy of limiting mobility during the pandemic to minimize the transmission of dengue fever.

The COVID-19 pandemic has had a significant impact on the implementation of the Dengue Hemorrhagic Fever Elimination and Control Program at the Sememi Health Center. These effects include advisory products to deal with COVID-19 cases, implementation of PSN mobilization, counseling, monitoring and evaluation that cannot be done to prevent the crowd from spreading COVID-19.

References

1. Harapan H, Michie A, Mudatsir M, et al. Epidemiology of dengue hemorrhagic fever in Indonesia: analysis of five decades data from the National Disease Surveillance. BMC Res Notes; 12. Epub ahead of print 20 June 2019. DOI: 10.1186/S13104-019-4379-9.
2. Indonesia Ministry of Health. Profil Kesehatan Indonesia 2019, https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjepKSY0Lj6AhXc23MBHfRXAtcQFnoECBwQAQ&url=https%3A%2F%2Fpafi.or.id%2Fmedia%2Fupload%2F2020110902074 2_466.pdf&usg=AOvVaw111tCsGbgUr96uvQbdjXjn (2020, accessed 29 September 2022).
3. Tang SCN, Rusli M, Lestari P. Climate Variability and Dengue Hemorrhagic Fever in Surabaya, East Java, Indonesia. Indian J Public Health Res Dev 2020; 11: 131.
4. Dinas Kesehatan Kota Surabaya. Profil Kesehatan Kota Surabaya 2019. Surabaya, https://dinkes.surabaya.go.id/portalv2/dokumen/Profil%20Kesehatan%20Kota%20Surabaya%202019.pdf (2020, accessed 23 October 2022).
5. Yudhastuti R, Lusno MFD, Mirasa YA, et al. Dengue Fever Dynamics in Bali, Indonesia 2010-2018: An Interplay of Population Density and Climatic Factors. Acta Med Iran 2022; 60: 366–374.

6. Maulana MR, Yudhastuti R, Lusno MFD, et al. Climate and visitors as the influencing factors of dengue fever in Badung District of Bali, Indonesia. Int J Environ Health Res. Epub ahead of print 2022. DOI: 10.1080/09603123.2022.2065249.
7. Yudhastuti R, Lusno MFD. Integration of Climate Factors for Dengue Fever Control Model in Bali. Annals Of Tropical Medicine And Health 2021; 24: 24–173.
8. Dinas Kesehatan Provinsi Jawa Timur. Profil Kesehatan Provinsi Jawa Timur Tahun 2018. 2018.
9. Dinas Kesehatan Kota Surabaya. Profil Kesehatan Kota Surabaya 2020. Surabaya, https://drive.google.com/file/d/1PsC1ow-c6HEtVbsRU7r4Z4al4XcGRhOW/view?usp=sharing (2021, accessed 23 October 2022).
10. Badan Pusat Statistik Republik Indonesia. -STATISTICS OF SURABAYA MUNICIPALITY - KOTA SURABAYA DALAM ANGKA 2020. Surabaya, 2020.
11. Pusat Statistik Kota Surabaya B. BENOWO DALAM ANGKA.
12. Kemenkes RI. Modul Pengendalian Demam Berdarah Dengue. Kementrian Kesehatan Republic Indonesia Direktorat Jenderal Pengendalian Penyakit Dan Penyehatan Lingkungan, 2011.
13. PERATURAN MENTERI DALAM NEGERI NOMOR 12 TAHUN 2008.
14. Utari T, Wediawati T, Althalets F. The effect of stress and workload on employee performance in the division maintenance department PT Indominco Mandiri In Bontang. Technium Social Sciences Journal 2021; 22: 35–44.
15. Rusmiati E, Harjadi D, Karmela Fitriani L. ANALYSIS OF THE IMPACT OF RISK AND WORKLOAD ON MOTIVATION AND IMPACT ON EMPLOYEE PERFORMANCE. Business and Accounting Research (IJEBAR) Peer Reviewed-International Journal; 5, https://jurnal.stie-aas.ac.id/index.php/IJEBAR (2021).
16. Haksama S, Lusno MFD. EFFORT TO IMPROVE THE QUALITY OF HEALTH CARE BASED ON SPIDERWEB MATRIX IN PUSKESMAS X REGION Y. In: The Second International Conference on Entrepreneurship. Surabaya: icoen.org, pp. 102–111.
17. Kosasih CE, Lukman M, Solehati T, et al. How to Cite: Effect of Dengue Hemorrhagic Fever Health Education on Knowledge and Attitudes, in Elementary School Children in West Java, Indonesia. Epub ahead of print 2021. DOI: 10.37028/lingcure.v5nS1.1349.
18. Vo TQ, Pham TTP. Revisiting dengue-related knowledge, attitudes and practices: A cross-sectional study in Ho Chi Minh City, Vietnam, 2018. J Pak Med Assoc 2019; 69: S-108-S-117.
19. Usman HB, AlSahafi A, Abdulrashid O, et al. Effect of Health Education on Dengue Fever: A Comparison of Knowledge, Attitude, and Practices in Public and Private High School Children of Jeddah. Cureus; 10. Epub ahead of print 1 January 2018. DOI: 10.7759/CUREUS.3809.
20. (PDF) The Importance of Training and Development in Employee Performance and Evaluation, https://www.researchgate.net/publication/332537797_The_Importance_of_Training_and_Development_in_Employee_Performance_and_Evaluation (accessed 27 October 2022).
21. le Tan T, Vu Tram Anh P, Nguyen Phuong Nhu P, et al. Research Factors Affecting the Working Motivation of Employees at Accommodation Facilities in Danang. 2021.
22. Azmy A, Risza H, Adhykusuma A. Implications of work motivation, employee discipline, and compensation on employee performance while working from home at a digital marketing company. Jurnal Manajemen dan Pemasaran Jasa 2022; 15: 13–36.
23. WHO. Comprehensive guidelines for prevention and control of dengue and dengue haemorrhagic fever. Epub ahead of print 2011. DOI: 10.1017/CBO9781107415324.004.
24. Vythilingam I, Wan-Yusoff. Dengue vector control in Malaysia: Are we moving in the right direction? 2017.
25. Treatment, prevention and control global strategy for dengue prevention and control 2.
26. Komansilan A, Suriani NW, Komansilan R. Toxic Test of Lavender Leaf (Lavandula angustifolia) Ethanol Extract as Biolarvicide for Aedes aegypti Mosquitoes Vectors of Dengue Hemorrhagic Fever. International Journal of Environment, Agriculture and Biotechnology; 6, http://journal-repository.com/index.php/ijeab/article/view/4472 (2021, accessed 24 October 2022).
27. Trisandy AY, Azmi Maruf M, Yudhastuti R, et al. Large-Scale Social Restriction (LSSR) Policy and Dengue Hemorrhagic Fever Cases during COVID-19 Pandemic in Indonesia (Case Studies: Five Cities/Districts in East Java Province). Kesmas: Jurnal Kesehatan Masyarakat Nasional (National Public Health Journal) 2021; 0: 49–52.
28. Sulistyawati S. Understanding community involvement on dengue prevention in Sleman, Indonesia: A free listing approach. J UOEH 2020; 42: 231–236.
29. Wu YC, Chen CS, Chan YJ. The outbreak of COVID-19: An overview. J Chin Med Assoc 2020; 83: 217–220.
30. Wesolowski A, Qureshi T, Boni MF, et al. Impact of human mobility on the emergence of dengue epidemics in Pakistan. Proc Natl Acad Sci U S A 2015; 112: 11887–11892.
31. Kiang M v., Santillana M, Chen JT, et al. Incorporating human mobility data improves forecasts of Dengue fever in Thailand. Scientific Reports 2021 11:1 2021; 11: 1–12.