People’s Knowledge on Dengue Hemorrhagic Fever

Fithria Dyah Ayu Suryanegara1*, Ndaru Setyaningrum2, Suparni Suparni3, Akhsan Wisnu Triaji4, Mukfi Rahman Wibowo5 and M.Yudi Ransatullah6

1,2,4,5,6Department of Professional Pharmacy, Universitas Islam Indonesia, Indonesia
Jalan Kaliurang km 14.5 Yogyakarta, Indonesia
3Department of Pharmacy, Universitas Islam Indonesia, Indonesia
Jalan Kaliurang km 14.5, Yogyakarta, Indonesia
*Corresponding author: 106130101@uii.ac.id

ABSTRACT

Background: The incidence rate of Dengue Hemorrhagic Fever (DHF) in Indonesia has increased year by year, from 0.05/100,000 in 1968 become 35-40/100,000 in 2013. It indicated that Indonesia still being an endemic country for DHF. The efforts to prevent DHF are closely related to people’s knowledge of DHF. Objective: This research aimed to ascertain the knowledge of people in Sleman District, Yogyakarta Special Province regarding Dengue Hemorrhagic Fever (DHF). Method: A cross-sectional study was conducted to assess the knowledge of people at Mlati, Kalasan, Gamping, and Godean sub districts in Sleman District, Yogyakarta Special Province. Total respond ents was 795 people. Knowledge of dengue was assessed by questionnaire. Result: There were no adequate knowledge of community about the DHF infection transmission (could be transmitted through blood 64.91 %), the mosquito’s life cycle (74.84%) and biting behavior (50.69%), DHF infection symptoms (similar with influenza 44.15%), and DHF infection prevention (about vaccine 54.09%) and treatment (about Paracetamol used 57.86%). Conclusion: The average of knowledge on dengue prevention was 78.90%, may reflect of moderate level of knowledge. The community in Sleman District still need education about DHF prevention, treatment and transmission.

Keywords: Incidence rate, Dengue Hemorrhagic Fever, Knowledge

INTRODUCTION

Dengue is a disease caused by virus and transmitted by the mosquitoes (mosquito-borne viral disease). The mainly mosquito’s species contribute to the dengue virus transmission is Aedes aegypti and Aedes albopictus. There are 4 serotypes of virus that cause dengue (DEN-1, DEN-2, DEN-3 and DEN-4). Dengue incidence has increase dramatically over the world in recent decades (WHO, 2017). DHF still become health problem in Indonesia since 47 years ago (Ministry of Health Republic of Indonesia, 2016). The incidence rate of DHF in Indonesia has increased year by year, from 0.05/100,000 in 1968 become 35-40/100,000 in 2013 (Karyanti et al, 2014). Yogyakarta Special Province become top 5 province with the highest incidence rate in Indonesia. The upward trends of DHF incidence caused by the high level on people mobilization, urban development, climate change, and high population density. On the other hand, the community awareness and participation on PSN (Mosquito’s Nest Eradication) still lacking (Ministry of Health Republic of Indonesia, 2016). The lack of community knowledge on the dengue epidemiology and vectors contribute to the upward trends of dengue (Ashok et al, 2010).
METHOD

A cross sectional study was carried out to measure the community knowledge on dengue. The research conducted at 4 sub districts in Sleman District, Yogyakarta Special Province on May-November 2015. The sub districts involved were Mlati, Kalasan, Gamping, and Godean sub districts. The sampling method was purposive sampling, we preferred sub district with high incidence rate of DHF in Sleman District. The knowledge on dengue assessed used questionnaire which have been validated through internal validation by 2 experts SS and SAK. The questionnaire adopted from Al Dubai et al (2013) and Abdullah et al (2013). The questionnaire contains of 16 question about dengue. We involved 795 respondents in our research.

RESULT AND DISCUSSION

| Table 1 Socio-demographic characteristic of respondents |
|-----------------------------------------------|
| Socio-demographic variables | N (%) |
| Gender                      |       |
| Male                        | 315 (39.62) |
| Female                      | 480 (60.38) |
| Age                        |       |
| <17 years                   | 0 (0.00) |
| 17-25 years                 | 56 (7.04) |
| 26-35 years                 | 152 (19.12) |
| 36-45 years                 | 219 (27.55) |
| 46-55 years                 | 214 (26.92) |
| 56-65 years                 | 110 (13.84) |
| >65 years                   | 44 (5.53) |
| Marital Status              |       |
| Single                      | 77 (9.69) |
| Married                     | 718 (90.31) |
| Highest Educational Level   |       |
| No formal education         | 16 (2.01) |
| Elementary School           | 127 (15.97) |
| Junior High School          | 146 (18.36) |
| Senior High School          | 383 (48.18) |
| Diploma                     | 47 (5.91) |
| Bachelor                    | 71 (8.93) |
| More than Bachelor          | 5 (0.63) |
| Occupation                  |       |
| Non skilled worker          | 130 (16.35) |
| Farmer                      | 31 (3.90) |
| Businessman/woman           | 137 (17.23) |
| Private employee            | 105 (13.21) |
| Government employee         | 31 (3.90) |
| Retired                     | 22 (2.77) |
| Housewife                   | 268 (33.71) |
| Others                      | 71 (8.93) |
| Monthly average income      |       |
| Below IDR 1,000,000         | 462 (58.11) |
| IDR 1,000,001 – IDR 3,000,000 | 258 (32.45) |
| IDR 3,000,001 – IDR 5,000,000 | 53 (6.67) |
| IDR 5,000,001 – IDR 7,000,000 | 10 (1.26) |
| More than IDR 7,000,000     | 12 (1.51) |

The knowledge survey on dengue prevention in Sleman District indicated that 60.38% of respondents were female (Table 1). Mostly of respondent was adult people aged at range 36-45 years old (27.55%) and their majority marital status was married (90.31%). Near of half
respondents have a middle education level (senior high school background) and work as housewives (33.71%) which had monthly income below IDR 1,000,000 (1 USD = IDR 13,239).

The results of the research indicated that people in Sleman District aware on the Government program to eradicate DHF through PSN (Mosquito’s Nest Eradication) (98.74%). They also have enough knowledge about the vector for DHF is Aedes aegypti species (98.87%) and it’s breeding place (97.48%). They knew that DHF could infect everyone at any ages (98.62%) and the risk is dying (97.23%). On the other hand, they have not enough knowledge about the transmission process, mosquito’s life cycle that related to the PSN effectively, treatment of DHF, and epidemiology of DHF. Therefore, from the research result recommended for conducting dengue education program focused on the transmission, treatment and prevention.

| No | Knowledge Related to Dengue in Sleman District | Percentage |
|----|-----------------------------------------------|------------|
| 1  | DHF infection similar with influenza            | 44.15      |
| 2  | Aedes Aegypti bites during dusk and down       | 50.69      |
| 3  | There is no vaccine to prevent DHF infection   | 54.09      |
| 4  | DHF outbreaks could be happened in the rainy season | 55.85  |
| 5  | Paracetamol used in DHF infection just for antipyretic | 57.86 |
| 6  | DHF infection could be transmitted through blood | 64.91 |
| 7  | The mosquito’s life cycle is one week          | 74.84      |
| 8  | DHF transmission cycle                          | 83.65      |
| 9  | Temephos kill the Aedes aegypti larvae         | 92.96      |
| 10 | DHF sign and symptoms, such as fever, head ache, muscle joint pain | 96.1      |
| 11 | DHF prevention through prevent mosquitos spread and breeding | 96.35  |
| 12 | DHF infection at risk of dying                 | 97.23      |
| 13 | The mosquito’s breed in the water              | 97.48      |
| 14 | DHF could infect at any ages                   | 98.62      |
| 15 | Aware about governance mosquitoes nest eradication | 98.74 |
| 16 | Dengue is caused (transmitted) by Aedes Aegyptimosquitos | 98.87 |

CONCLUSION

The results of study indicated that the level of knowledge on dengue prevention in Sleman District was at moderate level (78.90%). In order to improve the community knowledge, the knowledge based education campaign should be conducted especially focus on dengue transmission, prevention, and treatment.

ACKNOWLEDGEMENT

We would like to thank Ministry of Research, Technology and Higher Education of Republic Indonesia for the Fundamental Grants period 2015-2016. We also be thankful for all of support from Director of Research and Community Services of University of Islam Indonesia.

REFERENCES

Abdullah, M.N., Wan Azib, W.N.H., Mohd Harun, M.F., & Burhanuddin, M.A., (2013). American International Journal of Contemporary Research, 3 (5), pp 69-75.

Al Dubai, S.A., Ganasegeran, K., Mohamad Raham, A., Alshagga, M.A. & Saif Ali,R., (2013). Southeast Asian J Trop Med Public Health, 44 (1), pp 37-49.

Ashok K., V., Rajendran, R., Manavalan, R., Tewari, S.C., Arunachalam, N., Ayanar, K., Krishnamoorthi, R., & Tyagi, B.K., (2010). Studies on Community Knowledge and
Behavior Following A Dengue Epidemic in Chennai City, Tamil Nadu, India. *Tropical Biomedicine*, 27 (2), pp 330-336.

Karyanti, M.R., Uiterwaal, C.S.P.M., Kusriastuti, R., Hadinegoro, S.R., Rovers, M.M., Heesterbeek, H., Hoes, A.W., Bruining-Verhagen, P., (2014), The Changing Incidence of Dengue Haemorrhagic Fever in Indonesia : A 45-year Registry-Based-Analysis, *BMC Infectious Disease*, 14:412.

Ministry of Health Republic of Indonesia, 2016, *Infodatin: Situasi DBD di Indonesia*, Jakarta, 1-12.

WHO. (2017), *Dengue and Severe Dengue*, from http://http://www.who.int/mediacentre/factsheets/fs117/en/ accessed on 3rd October 2017.